Vol. III

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1928

No. 357

ALBERT OTTINGER, AS ATTORNEY GENERAL OF THE STATE OF NEW YORK, APPELLANT,

vs.

CONSOLIDATED GAS COMPANY OF NEW YORK

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF NEW YORK

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By the Master:

I would not assume that the cost of the $5,000,000 to the established company would be on the same basis as I have estimated here. The established company ought to be able to obtain $50,000,000 for much less than I have estimated here. I do not say that it would. This is not based on the cost of financing entirely new construction. It is theoretically a new construction, but this is really based on current costs of financing going concerns, and largely the cost of bonds, bond issues. The current cost of bonds is generally about four per cent spread, and it generally costs about half a point for the trustee's fees and the printing [fol. 2281] and drawing of the mortgages, etc. That makes about 4½ points. I have taken five but that is bonds, but then stock, the spread is usually six or eight per cent. Now, I have taken five as an average of the whole enterprise which I think is very modest even for a going concern. It certainly would not finance a construction concern. This is the expense of securing money and not the return we would have to pay on the money.

By Mr. Donnelly:

I have not testified that if my estimate were for an established and going concern as distinguished from a gas plant about to be produced my percentage for the cost of financing would be less than that which I have given here.

I didn't so testify in the Brooklyn Union Gas Company case recently before Mr. Latson. I testified there, as a witness for the gas company. The number of consumers I gave as the number assumed by me as of June 1, 1923, was the number of consumers that the Consolidated Gas Company had on that date. The number of active meters. They had quite a number of locked meters. I have taken the active meters which were not locked. If my estimate for the cost of financing were made with respect to a gas company having a less number of consumers than the number I have just given I do not know whether our cost of financing would be any different, more or less than the one I have given here, if there were less consumers it would not be any different. If it were a number that was a hundred

thousand less, that would make a difference. As to what prospect of increased business I assumed would be present with the company in making up our cost of financing, I paid no attention to that question at all. Necessarily, that is not one of the elements taken into consideration in estimating the cost of financing a gas enterprise about to be launched. We are only financing for the existing business, that is all. I took the number of consumers as of June 1, 1923 because that is what they have. I took everything as it existed on June 1, 1923. That was the condition of my [fol. 2282] appraisal. In estimating the going value I figured the period of about five years after the gas company had been constructed would be required for it to obtain the number of consumers which the company had as of June 1, 1923. In estimating financing I did not take any account of any period. I just stated that I took a definite period of time during which I would have carrying charges, and I assumed the carrying charges would go on to the going value in estimating this financing. That is the number they did have, and I assumed what they did have. I assumed all the conditions as of June 1, 1923. If they had 100,000 more consumers than the number that I have given as of June 1, 1923, my estimate of the cost of financing would be greatly to the extent that you would required increased capital. I did not testify in the Brooklyn Union Gas Company case that if our estimate were for an established and going concern as distinguished from a gas plant about to be produced, our percentage for the cost of financing would be less than I have given here. In the trial of the pending Brooklyn Union Gas Company I was asked this question and made this answer:

"Q. Would the rates be different for a company which is a going concern, from one which was in progress of construction?"

"A. Yes sir."

And as to the following question:

"Q. And in your opinion the rates of money for a concern which is being constructed de novo are greater than for one which is a going concern?"

"A. I testified to that, here."

Also as to:

"The Master: On June 1st?"

"Mr. Cummings: On June 1st?"

"Q. (Continued.) Is that right?"
"A. Yes, I testified that here this afternoon."

[fol. 2283] I was asked the same questions and gave the same answers above from the trial of the Brooklyn Union Gas Company Case and I have just testified the same thing to the Master, that it will cost more to finance a construction enterprise than it would a going enterprise, and the figure I have used here is a going enterprise figure. I told the Master that just a few minutes ago. In making up my estimate of the cost of financing I gave no consideration to the growth of the gas business in the City of New York during the past 25 years. There is such a possibility that the risk of decrease in the use of gas in the City of New York is one of the hazards that I assumed in the launching of the enterprise. I made no specific*ific* assumption on that point in working up my estimate of the cost of financing. I do not know that there would be any such decrease if the plaintiff were given a sufficient increase in its gas rates to enable it to earn 8 per cent on the reproduction estimates which it claims. That is counsel's (Mr. Donnelly's- assumption. I have not assumed anything of that kind. I do not pass any opinion on that assumption at all. I do know that the sales have not decreased since the price was raised from 80 cents. In fact they very much increased.

I mean by "Under the conditions of hazard in such a community at this time"? knowing that the gas is costing the company practically a dollar a thousand to make and deliver, the Legislature reduced it to that, leaving it no return upon its capital. That is one of the greatest hazards that I know of, and a serious hazard, which costs hundreds of thousands of dollars to protect itself against, and that is cut out of your operating expenses by the Courts and Commissions. I think it is one of the greatest hazards that any enterprise is faced with in this country, and it means [fol. 2284] a loss to investors, and has cost these companies

a great deal of money. That is the principal hazard. The others are so small in comparison that it seems a waste of time to mention them. In the Brooklyn Union Gas Company Case I prepared an exhibit similar to the one set forth in Plaintiff's Exhibit No. 856, probably with identically the same language as pages 3 to 8 inclusive of Plaintiff's Exhibit No. 856. About the same, I would not say it was identical, but about the same. The substance is there. I am President of a coal gas company operating in Maryland, by the name of The Hyattsville Gas & Electric Company. It has about 2,000 consumers. Hyattsville is about 35 or 36 miles out of Baltimore. I organized that company in 1895. It has about $500,000 worth of property. It is not capitalized at half a million. It is principally built on money advanced by me. Its nominal capital is $80,000. And back in the 90's I have already testified, I was associated with the East River Gas Company of Long Island City. I took part in the subsequent financing of that Company. I was consulted and prepared data, and talked with the financiers. The East River Gas Company at the time it began business or at any time thereafter was a gas manufacturing company. The plant I think is run by the New Amsterdam Company, and when I speak of the East River, the East River before the consolidation with the New Amsterdam was a manufacturing company. It was organized to manufacture and deliver gas. Originally, if we go back a little in history, if you are interested—the East River Company was distributing gas in [fol. 2285] Long Island City before the East River franchise was passed for New York. They were making and distributing gas in a very small way in Long Island City. They *they* were bought, that property was bought, and a tunnel put under the river and a new plant built many many times the capacity of the old one. The organization which started with the tunnel; but the cost of laying pipes in New York was way underestimated and they planned to lay a hundred miles of pipe and when they laid fifty the money was all gone, then they had to do some radical financing. It was in connection with that, that I was consulted and prepared the estimates, etc.

[fol. 2286] New York, June 6, 1924.

Met pursuant to adjournment.

ALTEN S. MILLER, a witness on behalf of plaintiff, resumed the stand.

Cross-examination continued by Mr. Donnelly:

Yesterday, at the close of the session I was speaking about my connection with the East River Gas Company of Long Island City. I did not make any preliminary studies prior to the organization of that company. I was not connected with the company at the time of its original organization. I had all to do with the subsequent development, but nothing to do with the preliminary or original organization. I came with it after the interest that bought it in 1902 and which had started work on the tunnel and started work on the original unit of the plant. I had to do with the preliminary organization of the Hyattsville Gas & Electric Company, and that is the only one previous to any starting at all. I had to do with the reorganizations. In Plaintiff's Exhibit No. 856, I assumed a long term bond would be issued for the purpose of financing the work covered by my appraisal, not specific as to years, but a long term bond. It would be anywhere from thirty to fifty years at whatever rate of interest the market would stand. I did not specify the rate, probably it would be five or six per cent. In making up my appraisal I made no specific assumption as to the rate of interest that the bond would carry. On page 2 of Plaintiff's Exhibit No. 856 my estimate for the item Engineering Superintendence and General Contractor's Expense and Profit is $8,465,779. Any split is somewhat arbitrary, but I would say that the engineering would be at least four per cent, which would include superintendence, of course, as you cannot subdivide those because it is engineering superintendence; and general contractors' expense would be *would be* anywhere [fol. 2287] from 7% to 8% and his profit would be the difference.

By the Master:

I figured that entire item at thirteen per cent. It leaves him something less than two per cent of actual profit on the job, after the administration and all the work is done and the contractor has been paid.

By Mr. Donnelly:

It would be pretty hard to do the job on a profit of two per cent or three per cent, but that figure is somewhat comparable to the rest of them, because everything has been pared to the bone. In engineering there is the general study of th project after it has been decided to go ahead, the preparation of detailed plans and specifications and a general supervision over the work. Not a detailed supervision, but a general supervision such as the ordinary architect gives to a building in its construction. That engineering is entirely different, separate and distinct, from the item Organization and Development to Construction. I assumed as large an engineering staff as might be necessary, I assume no specific staff. The common practice is to pay five per cent for engineering, and the proposition was put up to me what, as an engineering and contracting company I would undertake to do the entire job for. I said instead of doing it for five and ten, as is the ordinary custom, I would take it for thirteen covering both. The usual custom for engineering is five per cent. The item Engineering Superintendence and General Contractor's Expense and profit on page 6, second paragraph, would not include the detail of the water gas sets but it would include the type and location of the water gas sets. It would include general specifications as to the sizes of connections to the water gas sets, the sizes of blast pipes and offtake pipes, etc. The same thing would not be true of all [fol. 2288] the rest of the units which to go make up the gas plant.

The sub-contractor's profit is included in every individual item other than such work as would actually be done by the general contractor, which is principally the general connections in the plant. I do not know how much the subcontractors charge. Every different class of machinery-

maker has different profits, I assume. I don't know what the machinerymakers charge in various places. Where the Bartlett-Hayward Company acts as sub-contractor, I have assumed their profit as 10 per cent, the profit in that case over and above the expenses. It is a fact that considerable new construction has been done by the New York & Queens Gas Company for the past year or more, and the Consolidated Gas Company has done quite a little. A good deal of the construction work for the New York & Queens and the Consolidated has been done under the supervisions of the engineering staff of the Consolidated Company. I would not say that the greater part of it has been so done, I do not know that it has. I think the entire work is done under the supervision of the Construction Department of the Consolidated Gas Company. The Unit D at Astoria construction work done under the supervision of the Consolidated Gas Company's engineers has cost more than the amount of the original estimates. I think that perhaps almost all of the units have. I never made any study of it for that particular purpose. I know Unit D at Astoria took over 20 or 25 per cent more than the original estimate. I got that knowledge from studying the cost of Unit D and from *studying the cost of Unit D and from* study-[fol. 2289] ing the original estimates. That was almost entirely because of unfor-seen conditions or difficulties or instructions. That was not to be guarded against by the engineering skill of the gentlemen who made the estimates. I think almost always the construction work does cost more than the estimates of the Consolidated Gas Company's engineers. I would like to look that up and be prepared on the answer specifically Monday, because I just have not studied it for that purpose; but I will prepare myself specifically Monday and I am sure I can show you a dozen cases. I would not say that the excess, speaking of the actual cost of the construction work as compared with the estimates prepared by the company's engineers, was due to the fact that the construction work had been placed in the hands of the company's employees. I know Mr. W. Cullen Morris quite well and he is the head of the engineering staff of the Construction Department of the Consolidated Gas Company and I regard him as a competent en-

gineer. I recommended him for the position and I hired him when he first left college and with thoroughly competent subordinates under him. I would not say that the chance of his force being able to supervise the work of construction of these plants is small. On the contrary, I consider him one of the most competent construction engineers in the country, and he has got a very capable engineering staff, which has been trained over a great many years and [fol. 2290] is very valuable. Original estimates. That was caused from unfor-seen conditions and difficulties in construction almost entirely.

I did not write down any figure which I assumed as the cost of the detailed designs and drawings and the reparation of the specifications. From the other engineering it would be included in that 4 or 5 per cent, 5 per cent being the usual engineering fee. The cost of the detailed designs and drawings and specifications would be included in the 4 or 5 per cent that I have attributed to engineering. On Plaintiff's Exhibit 863, the fifth item on that page, I have given engineering 13 per cent. On page 2, Exhibit 856, Engineering, Superintendence and General Contractors' Expense and Profit is 13 per cent. Exhibit 863 shows apparatus and holders, including Omissions and Contingencies, Buildings and Mains. The 13 per cent for engineering is to cover whatever is included in omissions and contingencies, for which I have already allowed 5 per cent. That is not a duplication of percentages. Those items will cost, on a labor, material and sub-contract basis, $65,121,378. That is what they will cost. Now, on that your engineer and general contractor will get 13 per cent. I made no assumption with reference to the number of men who would be employed in the work of construction included in my estimates.

By "Contractor's Expense" under this item Engineering, etc., I mean the loss incurred by contingenies unforeseen or otherwise, such as delays in the shipment of materials. That would come in if it exceeded the five per cent allowance for that. I have already allowed five per [fol. 2291] cent for that. If it exceeded that, it would be that, but I have not included it as that. I mean I have already allowed for it under the heading "Omissions and

Contingencies." If it exceeded five per cent, it would be a loss to the general contractor; but that is not included in the general contractor's expense specifically here. Referring to the item "Administrative, Legal and Miscellaneous General Expense during Construction" I got my estimate of $1,839,679 for that item from Exhibit 863. It is 2½ per cent of $73,587,157 or the items which precede it on that page. I cannot split up my item of Administrative, Legal and Miscellaneous General Expenses so as to tell you how much I asumed for each of the items which make it up. It is not customary to keep accounts that way and I followed the usual method of keeping accounts. That percentage is based on my experience as to what you find in the general account when the work is done. The administrative and miscellaneous general expenses, the general account and one or two accounts, it costs about 2½ per cent to spend the money wisely on construction of this kind. There are not many legal expenses other than those I have included under the heading "Organization and Development Expenses prior to Construction." There are frequently objections to the construction of holders, for instance. You have to have injunction or court proceedings in connection with those. In the digging up of streets from time to time there are complaints and legal proceed- [fol. 2292] ings and proceedings and there are liable to be injunction proceedings against the construction of gas plants and there are always questions arising in large enterprises of this kind that you have to have legal advice continually, and sometimes court or arbitration actions, and this would cover any questions that came up in that connection, and questions as between the company and the contractor and sub-contractors. I made no assumption with reference to the amount of rent or the extent of the office or offices or as to the question where the office would be located. I assumed an office force sufficient to keep a careful record of expenditures in detail of expenditures of something like seventy five million dollars, to check up each individual bill, see that nothing was overpaid and that complete records existed of such payment after it was made. The auditors, general officers and book keepers would be in the general office. The others would be largely scattered

over the whole of Manhattan Island. The classes of employees that I intended to cover under that heading include general officers of the company, auditors, book-keepers, office boys. If you want it in detail I would list up everybody that goes into an office of a company spending $75,000,000 in two years. It would be an enormous office force and would include stenographers, telephone girls, office boys, messengers, janitors and scrubwomen, and all the other paraphernalia of an office which is competently taking care of expenditures of this amount. I have not [fol. 2293] attempted to give the number of each class of employees in that general office.

Anybody on that statement could check up the figure I have just given without having some information as to what it included by going to the subway construction here; go to every big construction of this kind; and follow the cost of spending money. I am competent to testify to what it costs and you can bring somebody to testify to the contrary. I have had personal experience in constructing a gas plant of this size, for instance the New Amsterdam plant at Ravenswood, which is larger than any plant in this Consolidated appraisal. It is not larger than the aggregate of the plants set forth in my Exhibit 856, but I had to do with construction of that plant and of these other plants set forth in Exhibit 856 altogether. Not at the same time and not all of the details in the plants in Exhibit 856, but some construction in connection with those plants as well as the complete construction of Ravenswood. The entire administration of the company during construction would be about two million dollars $1,839,679. During construction I assumed under this heading of Administrative, Legal and Miscellaneous General Expenses, just merely such an amount of fire insurance on such part as has been constructed, as the company would be likely to carry and any casualty insurance that they might put on inspectors on the work. Sometimes the apparatus and equipment such as would ordinarily be insured, are insured against loss by fire and sometimes they are not. Of course, there isn't [fol. 2294] much here, there isn't enough here, if there were generally, but there is very little insurance carried usually. There is no general practice about it one way or another. Each company is a law unto itself in that regard.

I have not figured that it would be any appreciable amount. I just put it in as one of the possible expenses. Of course, 2½ per cent would not be enough. It would not be any appreciable amount. The employees and public liability are carried in the cost on the labor, material and sub-contract basis.

We compute the interest on the land for a period of two years at a rate of 8 per cent, as shown on Plaintiff's Exhibit No. 863, page 7 and by "land" I mean land unimproved. I computed the interest on the land unimproved for two years, or 16 per cent altogether. I did not compute the interest on land and then add the land and improvements. I took a period of two years on the land and on the organization two years, and half the improvements or one year on all the improvements, at the same rate of per cent. Interest on the land unimproved is $2,233,464 as shown on Plaintiff's Exhibit No. 863. Under the heading of interest during construction, on Plaintiff's Exhibit No. 856, the interest rate of 8 per cent is taken for the obtaining of the requisite new capital by a gas company in this territory. I have already provided for that in the cost of obtaining the capital, at 8 per cent, and I have shown what it would cost, except I have taken a going concern instead of a construction concern. By the expression "Interest rate of [fol. 2295] 8 per cent is taken for the obtaining of the requisite new capital by a gas company in this territory," I had in mind a company of the financial resources of the Consolidated Gas Company, as it existed as of June 1, 1923 and with a company with its financial resources, you have to pay as much as 8 per cent for this new capital.

Under the same heading I also show as to cost of buildings and apparatus and the cost of engineering and superintendence, administration and legal service and miscellaneous general expenses; and interest should be calculated for one year at the 8 per cent rate. I have not already provided for that expense in my estimate for organization and development prior to construction. I see no relation at all between the first paragraph of that item, organization and development expenses prior to construction, and particularly to that part of it where it says "This item covers the services and expenses necessary in the organization and development of the company from the time of the inception

of the project to the time when the project is brought to the point where construction can commence." You have to pay the interest rate and you have got to pay the expenses of financing and the cost of the financing or the expenses of financing is not included in organization. Financing is done after your general organization is complete. As to whether I can segregate the items which are included in my [fol. 2296] estimate for interest during construction and give the amounts assigned to each, the answer is shown on Exhibit No. 863. I have assumed that the work would be paid for approximately as completed from month to month. I have forgotten if I were asked a question of a similar character in the Brooklyn Union case recently. I was asked about a holder I constructed for the Brooklyn Union Company at a cost of $372,000 and I think that is the Citizens Holder. I recall that I likewise testified that a large part of that material that went into that holder was paid for before it left the shop. I think it took considerably over two years for the building of that holder. I was entirely paid for this work some time after it was finished. It was considerably over a year between the time that the order was placed and we began erection. At the time of the former suit brought by the Brooklyn Union Gas Company to test the validity of the 80 cent Gas Law, I was doing some construction work for that company at that time. We were putting in a lot of new equipment and rearranging some of the old equipment, so as to give the plant increased capacity. We were paid by notes, because the company was not in a financial position at that time to pay us. The face of the notes was six per cent interest but we knew we were going to get them, and we made them an allowance on that. I don't remember whether we discounted those notes, I think we held the notes until they were paid by the Brooklyn Union Gas Company. If we borrowed any money we borrowed on our own notes, we did not discount them in [fol. 2297] any sense.

I assumed to reproduce this property as it existed as of June 1, 1923, and I assumed that the company as reproduced would not have all the customers burning gas, or having customers burning gas, I tried to estimate what that was worth. In the reproduction of the plant shown in Plaintiff's Exhibit No. 856, it is entirely immaterial

whether it is in territory which used gas or not. It costs the same. In the preparation of Plaintiff's Exhibit No. 856, I made no assumption that this plant was to be physically constructed in the territory in which gas had never before been used. I just estimated the cost of reproducing that plant as it existed on that date and as of the prices of that date, and it made no difference whether you assumed whether these people had ever used gas before or not. It is merely a method of determining the value of the property that existed then, and that is the cost to reproduce it. In giving the figure which I gave yesterday afternoon as going value, that was the determination of the value of the business which the company had at that time and determined that way on the assumption that gas was not actually being used. It did not assume it never had been used. It assumed that it was not used at that time. People in New York have had considerable experience in the use of gas as of June 1, 1923. My estimate for going value, is based on the assumption that the company whose properties I have assumed will be reproduced as of June 1, 1923 had the num-[fol. 2298] ber of consumers it has, with a considerable experience in the use of gas.

My estimate for going value is $35 per meter. That is my estimate of what it would cost to reproduce these number of active customers if the company had not had them as of that date and that was based on my experience in the early days of the East River Gas Company and my experience in Baltimore in securing new business, and checked up to some extent by some experience with this company. I do not know if I took the number of active meters the company had on June 1, 1923, and divided it and by that method got the price per meter. I took 548,254 gas meters, and that number multiplied by 35 would give the figure I have given here as my estimate or going value, and if I divided one figure by the other it would give 35. In making up the estimate for going value that I have testified to here, I assumed in every detail that the territory would be the same in every detail as that now served by the Consolidated Gas Company. With reference to the density of population and the individuals in the population, with reference to the number of buildings and the character of buildings and the character of the occupants of the buildings. It

gave a minor consideration to the past growth and development of the territory, except to the extent that this company actually now is making very definite expenditures in connection with new business, and I gave some consideration to those. I gave no consideration to the prospects of immediate future development and extension of [fol. 2299] the company's territory. This estimate that I have given for going value includes in part at least the cost of annexing the business. That figure covers that entire subject of cost of annexing the business. I assumed that you would have to advertise, canvass, pay for the installation of meters and pay for the installation of gas appliances and, in order to build up this business in a short period, you would make concessions in the way of prices of gas appliances and pay commissions for the sale of gas appliances and pay commissions for the securing of new business and keep in touch with the users of such appliances to some extent, to be sure that the people understood the operation. I testified recently before the Master in the pending Brooklyn Union Gas Company case on this same subject of going value. I have not changed my theory upon which I estimated my figure of going value since I so testified upon the same subject before that Special Master. I don't recall when I was before Special Master Latson of the pending Brooklyn Union Gas Company Case, that my estimate of going value was upon the assumption that a gas enterprise was being located in a territory in which gas had never been used before. I don't remember specifically the questions that the Master asked me upon the subject and the answers that I gave. I don't recall that the Master asked me if I were not indulging in a very violent assumption and I recall that he asked me to tell him any city in the United States that was comparable and I said that I did not know what city, and we have gone over [fol. 2300] that same subject matter here and what is the use of going over it again. I said that the City of Osaka, Japan, was the only city of over a million people that did not have gas until they had a million people. My brother built a gas plant in Osaka, and that was the only city that had a million people before a gas plant was built.

I assumed a very large and considerable amount of advertising in the shape of newspapers and the sending out

of circulars would be used in connection with canvassing; that is, to induce people to use gas to the same intensity as it was being used as of June 1, 1923. To the best of my recollection the boundaries of the territory served by the Consolidated Gas Company are Manhattan Island. I do not know what the boundaries were as of June 1, 1923, of the Consolidated Gas Company as compared with those in November, 1884, when it came into existence.

[fol. 2301] (Continuation of cross-examination of ALTEN S. MILLER, a witness on behalf of the plaintiff—Hearing of June 6, 1924.)

By the Master:

Regarding the question as to whether there is any recognized relation between the cost of reproduction of the plant and the amount of gas sold, that will vary somewhat with the territories. At the present time, the average plant runs from $8.00 to $10.00 per thousand cubic feet of gas on the reproduction cost basis. That figure of $8.00 would generally be water gas. You could not get much of a coal gas plant for $8.00. The expense of construction of a coal gas plant per thousand feet of gas made would be about double that of a water gas plant. Your manufacturing capacity in the coal gas plant is more than double your water gas plant. In the smaller plants, it will run higher, but I am speaking of large plants. In 1914 and 1915, I think it was $12 or $13 in the Passaic & Patterson case, where they found $4.50 per thousand in a suburban territory.

By Mr. Donnelly:

In answer to the Master's question as to costs of water gas plants and coal gas plants, I was assuming a modern [fol. 2302] coal gas plant such as you have at Astoria and such as we are figuring on for Hunts Point, and such as exists in Philadelphia and at the Central Union and up at Westchester. Some of the coal gas plant at Astoria is the same as that at the Central Union. The inclined benches are very similar. They have inclined benches at Astoria and inclined benches at the Central Union. The Astoria plant is not regarded by gas engineers as being more up-to-

date and modern than the Central Union. I think one is as good as the other. The Central Union was an experimental plant for Astoria. I started to put a good deal of that plant in the Central Union and experiment on it, so probably Astoria has some advantages from that experimentation, but the general design is very similar to that at the Central Union.

By the Master:

In answer to your question as to what was the generally recognized cost as compared between a water gas plant and a coal gas plant, I was speaking of the entire system complete—when I spoke of the $8.00, that is including the distribution system. For the manufacturing plant alone, I should say, in round figures, a coal gas plant would be about $3.00 and a water gas plant about $1.50, based on 200 days' use of the plant. Suppose you have a million feet of capacity in your plant, you would probably sell only about 200 million feet of gas in a year. You cannot run it 365 days, so if you had a million feet of capacity, you would sell about 200 million of it—I mean without any surplus capac-[2303] ity, but taking the actual rated capacity of the plant without any surplus, by "surplus" I mean reserve. That is to say, assuming you would run into 200 days, that would give about $3.00 per thousand cubic feet of annual sales, that the plant itself would cost, as against $1.50 per thousand feet of annual sales that the water gas plant would cost. I assume that at the general basis of 200 days' servive a year, from year to year and from season to season, there is a variation. At one time we got up to 270 days' use on the maximum day. The increased demand for gas for heating has pulled that down, because you heat on very cold days and your peak is so much out of line that instead of getting 270 days, we now have dropped to about 200. When I spoke of running your plant 200 days, I mean running it in a year so as to make 200 days' maximum capacity. Of course, you generally run a coal gas plant more steadily than a water gas plant.

By Mr. Donnelly:

I am talking as a general proposition and also as a specific proposition because the Consolidated Gas Company does it. You run your coal gas plant to make more times

the maximum day's capacity than you do your water gas plant. You take up your slack in your operation with your water gas plant, so that ordinarily where the water gas plant will make less than 200 times the maximum day, the coal gas plant will make 250, that is, where you have a mixed water gas and coal gas. You use the water gas plant [fol. 2304] as a factor of flexibility to meet variations in demand. In that way, you will have a larger divisor and bring down the cost of the coal gas plant per thousand feet made in a year. After you get your $1.50 and your $3.00 for the water gas and the coal gas plants, respectively, everything that follows that is the same, mains and meters, and so on. Of course, the land on the coal gas plant is greater and the buildings are greater. The land is more extensive and that would not be included in my figure, but everything else would be the same. It would require more land for a coal gas plant than for a water gas plant. My figure did not include any outlying holders but some relief holders in the water gas plant.

[fol. 2305] New York, June 9, 1924.

Alten S. Miller, a witness on behalf of the plaintiff, resumed the stand.

Cross-examination continued by Mr. Donnelly:

Referring to plaintiff's Exhibit No. 865, relating to expenditures of restoring the works and holder stations of the Consolidated Gas Company, I began preparation of that exhibit, first, with rough notes, back in June, 1923. That was the time of my first examination, and I just roughed up a memorandum of conditions at the time of my first survey for the purpose of preparing the inventory. It was in May or June when I personally made the examination for the purpose of an investory and appraisal, and I made some mental notes as to the conditions that time. My examination embraced all the plants and holder stations of the company. I did not examine in very great detail, at that time, to determine in my mind the condition [fol. 2306] of the plant and equipment at the plant and

holder stations, but I took account and looked over everything as I went through, but did not spend a great many hours at that time. Referring to Exhibit No. 865, first, at that time, I made a general examination of all the property to see what was there and get a general idea of the conditions. Then, at some time this year, I had my assistants take up and go through and make an examination of everything to see just what the condition was as of 1924 and go back to the records of the company to see what had been spent on it and talk to the Construction Department and the plant superintendents to see what their ideas were of what had been done on it and then looked up my own records to see what the Bartlett-Hayward Company had done on this property. Then in conjunction with this condition at a later date and with the work that has been done on it since they made up reports, which reports I took and went over the properties and made examinations and made such changes as seemed necessary to me. Then I went over the estimates which in some cases were based on actual costs and some of them on prospective costs and checked those up and proved them and made such changes as were necessary. The changes were all then embodied in Plaintiff's Exhibit No. 865. The examinations were [fol. 2367] principally made by Messrs. Goodrich, Krekel & Bolgiano. That was I think at varying dates through March and April; some of them also in the month of June, of this year. I talked to the Construction Department and my Assistants too, talked to Mr. Morris, Mr. Hunter, Mr. Alrich, Mr. Carpenter, Mr. McIntosh and Mr. Devoe, as well as those in charge of the drawings and quite a lot of discussion with Miss Morgan. In connection with those examinations and those talks, I made a number of examinations of the records—not of the books. Plaintiff's Exhibit No. 865 does not purport to show entirely what had been expended by the company in the way of repairs, because many of the repairs subsequent to June 1st were under conditions that occurred subsequent to June 1st—a very large proportion of them. I went over the property *the property* and the estimates as to the basis of this exhibit that had been prepared.

With reference to Plaintiff's Exhibit No. 865, my last personal examination of these properties for the purpose of this exhibit—some of it was as late as Monday of last

week. I think I am through with my examination. I have had my men there since Monday, but I was there as late as Monday. In making up this exhibit, Plaintiff's Exhibit No. 865, I did not provide for growing inadequacy of any equipment in the plant. There is no evidence of any. In this same provision I made no provision for losses in value due to the changes in the art, to all that there was, but there was none. By that I mean that there was no loss in [fol. 2308] value due to the changes in the art of gas making that may be developed.

Wear and tear in the various parts of the plant and its component parts are fully provided for. Most of it a large part of it, was for providing for wear and tear which was not immediately required as of June 1st. To ascertain the amount of wear and tear to various pieces of equipment and parts making up the plants listed in Plaintiff's Exhibit No. 865, I made a very careful examination of every piece of machinery in the plant and where there was any doubt or any question I allowed for overhauling, whether it was apparently necessary or not. Where there was no question I knew exactly what to allow for. I did not take or cause to be taken apart any of these machines for the purpose of seeing what if any wear and tear had been incurred on the machines. I had manholes and hand pipes taken off the boilers. A piece of running machinery I did not, because it was not necessary. You can tell by listening to a running machine whether it needs tightening up and some of the machines were actually apart as of the various times that I visited the plant. I made a very careful examination of the water gas sets inside and out, as indicated by the records of the repairs of the water gas sets subsequent to June 1st. All inside repairs necessarily had been made in the year. The water gas sets are overhauled about every thousand or twelve hundred hours of actual operation, so they have been overhauled several times in the last year.

[fol. 2309] The shells of some of them have been repaired and certain castings and so forth have been replaced. I did not take apart any of the water gas plants for the purpose of seeing what if any repairs or wear and tear there had been. I could tell if there had been any wear and tear in the machine not visible to the naked eye, by the records

of the last twelve months. They may have been overhauled many times in the last twelve months. The records show that repairs were made to replace wear and tear in the last year. Wear and tear had got to a point where it was necessary to make repairs to overcome it. It would not be made if it was not necessary. Repairs are made every time a water gas machine is shut down and a machine is shut down on an average of five or six times a year, so that these machines are overhauled five or six times a year, and they would not be overhauled until it was thought necessary.

By the Master:

Machines are ordinarily run a thousand hours. That would be about forty days. That would be about every eight or ten weeks, on the average, because the company had spare machines, of course, which must have both space capacity and spare machines to be under repair and it goes through the machine regularly in its use and repairs, so that the machine in the ordinary course of business would be overhauled every eight or ten weeks throughout the year. Such repairs as would be made at the end of that time would not necessarily be only such as would have been occasioned by the use of the machine during the pre-[fol. 2310] ceding eight or ten weeks, because in some of these particular machines I have allowed here for putting new shells on the generators and new connections which resulted from operations of many years; some of it may be the accumulation of many years; much of it, though, may be just the accumulation of the previous six weeks of actual operation. I do not know what is meant by the expression "Checker squares" in the boilers as used in your question. The renewal of the bricks in the boilers depends a great deal on the coal you are burning and the type of furnace you have and the type of furnace you are using. It is a tremendously variable thing—so variable that I would not like to give any specific time. The tar burning boilers, for instance, could almost indefinitely run without replacing bricks, whereas if you have chain grates, you would replace a few bricks or some bricks every month or six weeks, or something of that kind.

(The following vouchers were handed witness by Counsel:)

Voucher No. 18627, which is dated July 31, 1923, rendered by the Evans & Howard Fire Brick Company, charged to repairs of furnaces, boilers and accessories, at the 21st Street Station of the Consolidated Gas Company, and which calls for St. Louis 9-inch checker square, the total bill for which is $882; Voucher No. 18992, dated the same date, and rendered by the same people, calling for D. M. clay in sacks (625 sacks), $461.14, charged to the same ac- [fol. 2311] count as the preceding one; Voucher No. 2825, dated the same date, to the same people and which calls for the same kind of material as the two preceding vouchers, amounting to $844.79, charged to the same account as the preceding voucher and charged to furnaces, boilers and accessories; Voucher No. 20826, dated July 31, 1923, rendered by the same people for the same line of material for $744, and charged to the same account; also Voucher No. 25675, dated November 2, 1923, of the Louisville Fire Brick Works for $412.20 charged to the same account and same station, calling for 10,000 Louisville 9-inch fire brick. In Plaintiff's Exhibit No. 865 for the kind of material described in these vouchers for the year 1921, I have not included anything for that specific material because that is material replacing stock which was used up subsequently to June. The stock on hand the first of June was used up and this was ordered the first of July. In Exhibit 865 similar material for boilers at the 21st Street Station, is shown under some of the repairs of some of the boilers in this exhibit. There are some shown on 26. I do not know just exactly how much the material is on that page. I have got the labor included with the material as $728, of labor and material on Boiler No. 3. It is $20.97 of labor and material plus $70.03 on Boiler No. 1. There are [fol. 2312] some parts of the pointing up which call for a replacement of a few fire brick in 2 and 4—very little, though. These are the only items where the brick would appear as being used for boilers. Referring to Voucher No. 4,013, dated February 18, 1924, by the National Meter Company, which calls for one and one-half inch V. D. Empire Oil Meter $137.50, and which is endorsed, "Charged

to maintenance of boiler apparatus 21st Street Station", included in Exhibit 865 or which related to the 21st Street Station, no such similar item here. Voucher No. 20,586, dated September 6, 1923, Buckeye Engine Company $301.25, charged to Repairs steam engines 21st Street Station, for repairs to Buckeye Engines Nos. 5,036, 5,037 and 5,038. Referring to Exhibit 865 which deals with the 21st Street station, shows in part on page 25, that is Engine 5038. I mean the item against which is charged $23.36; that is in part there and the balance is $321.25 a replacement of parts that were on hand in June. Out of that $23.36 only a very small part of it was anything that is included on this bill—a very small part. Most of this bill is just for the replacement of spare parts in stock. I mean parts which are there to replace parts if and when they wear out. Spare parts for all running machinery and for anything that needs to be replaced in part, in quantities are kept on hand. There is a large stock of spare parts. But the replacements are not as a rule made until the parts are ac- [fol. 2313] tually worn out, unless they are broken. They break from time to time. There are a great many minor accidents in the plant. Can't help it. You have to be prepared for breakage. Much of the replacements are not due to being worn out. Much of them are due to breakage.

I do not know that that voucher No. 19345, dated August 22, 1923, by the Brown Instrument Co., $438.45, less $4.38 discount, making the net figure $434.07, charged to Repairs of Water Gas Sets and Accessories, and calling for one Duplex E. R. C. Recorder and a number of the other items has been included in that part of Exhibit 865 relating to the 21st Street station. The general overhauling of gauges where it might have been necessary, and I assume this was not necessary as of that date, is included on page 38; but I take it that at time there was nothing necessary for these parts, which are replacement parts anyhow. These pyrometers are continually burning out and you must carry them and this is a spare recorder. The parts which these will replace, if they have been used for replacement, wore out since June 1st, 1923. There is a good probability that those have not yet been used, even. These materials as indicated here are bought for stock. How long those parts last as a rule depends on the methods of repair. If the

points are taken out and they are overhauled every two weeks or so, they may last for many months; maybe years. [fol. 2314] If they are not taken out and overhauled very frequently and new cover pipes put on, they probably won't last over three weeks.

By the Master:

There is nothing on that voucher to indicate that it was bought for stock. I just know the custom. I know that those spare parts have to be carried in large quantities, because the recorders themselves—the instruments themselves must be frequently carried back to the laboratory. There is nothing on it to indicate that it had been used. Material of that kind as it is used is taken from stock, kept near the machines but not in the store-rooms. The custom is to charge replacement parts directly to operations to repair account, or replacement parts. Then at the end of the year there is an inventory taken and the replacement parts are checked back into stock from the repair account.

By Mr. Donnelly:

The number of such parts as are indicated by that voucher that is kept in stock varies according to how low they run down. They let the stock run down a bit. Then when they find they are running down they place an order, just as they do with all other classes of material. You do not order a piece every time a piece goes out. You order a sufficient number, based upon experience, to keep abreast for a reasonable time of the necessity for repairs.

Voucher No. 17,326, which is dated July 26, 1923, from the Boxboro Company, Inc., total amount $100, less $2 dis- [fol. 2315] count, making the net amount $98, and which bears the endorsement, "Accounts charged, repairs of water gas sets and accessories, 21st Street station," and which -alls for four 6-inch indicating gas machines gauges with the serial numbers enumerated on the vouchers. Still speaking of the 21st Street station, I have included that on page 38 of my Exhibit 856. I don't know how much on page 38 of that voucher. There are probably several hundred dollars for gauges there. In the $3,000 item. It is just an omnibus account. There are no work sheets for that item and

we never had any. After making an examination of all of the equipment, gauges, running machinery, and so forth, I found them in very excellent condition; so much so I could not see that anything could be done to improve them, and I just put an omnibus figure to cover such things as I could not actually feel or see at the moment. I included $3,000 for repairs of running machinery, gauges and so forth. Out of an abundance of caution; to take every precaution. Even though it was not needed at the time, as far as I could see, there was a possibility that there might be something, as these gauges always—these are stock gauges, but there is a possibility of something of this kind; so out of an abundance of caution I put in an omnibus sum for gauge and running machinery overhauling in every station. The figure of $3,000 rather than $1,000 or $5,000, or some other figure appealed to me as being better than [fol. 2316] one or four or five. These gauges called for by that voucher among these gauges for which I have estimated $3,000 were for stock to replace gauges that were in good condition May 1st. There are no gauges listed in the $3,000 item. In other words, the gauges set forth are not identifiable as being among the gauges for which I have allowed $3,000; no gauge identifiable in that $3,000. I show you Voucher No. 1262, dated December 12, 1923, from the Robins Conveying Belt Co., total amount of the voucher $2,153.60, less discount of $21.54, making the net amount $2,132.06, endorsed "Maintenance of Accessory Works Equipment," and calling for belting dated December 12, 1923. I have not included that in Exhibit 865, nor the belt which this is to replace, either. The belt which that is to replace has been put in since the 1st of June, last year. That is spare parts for the new coal handling machinery which we have been working on since the 1st of June. Those are spare belts. As to how long a belt of that character lasts, as a rule, depends a great deal on the care it receives. I have known it to last for 20 years. It may last a great deal longer.

I have not listed any repairs to gas meters in Plaintiff's Exhibit 865. They are regularly overhauled. I do not know how many meters were awaiting repair on April 1, 1924, or on June 1, 1923, at the repair shop. They have all [fol. 2317] been repaired long since. I included the meters

in the repair shop in my estimate. I did not make any attempt to find out how many meters were awaiting repair on either of these dates. I do not know that there have been any orders attended to relating to complaints in connection with leaks of meters since June 1st, 1923. There are a great many leaks of couplings and connections in the neighborhood of meters which are reported as meters leaks, but I do not know that there have been any leaks of meters themselves. I do not know how many on connections. They have had quite a number. It is a very common complaint. I made no inquiry with reference to those subjects, from anybody connected with the company. Similarly with reference to appliances, I did not make any inquiries except as to the number in stock. With reference to the repairs to appliances, they are regularly repaired. I did not inquire how much the repairs run into. They are regularly brought in and overhauled. I did not look at either the meters or appliances to see in what condition they were.

At the 21st Street Holder Station the item "3-Lift Storage Holder in brick tank 90 feet diameter by 27 feet high [fol. 2318] capacity 400,000 cubic feet, including tank and cup heating arrangement, known as Holders, 3, 4, 5 and 6," means four holders each of 400,000 cubic feet capacity.

Referring to your question as to whether there is any difference in efficiency between four holders of 400,000 cubic feet capacity each, and one holder of 1,600,000 cubic feet capacity, "Efficiency" in that connection does not mean anything to me. I don't know why I can't tell you. It just does not. So far as economy of operation is concerned, I do not know that there is any particular difference between four holders each of 400,000 cubic feet capacity and one holder of 1,600,000 cubic feet capacity. If we were constructing the 21st Street station, as to whether we would put in four holders of 400,000 cubic feet capacity each or one holder of 1,600,000 cubic feet capacity depends on the conditions under which it was being constructed. I do not know that I would put in either, but it depends entirely upon the conditions, and under the conditions under which 21st Street was constructed. I am reproducing conditions under which it was constructed and I would construct it just as it is. I do not think there would be any particular

difference in economy in operating by having four as against one. There might, it depends on many conditions of operation. When gas storage holders are built, they are not necessarily built with reference to the manufacturing capacity of the gas plant. There is some relation between [fol. 2319] gas storage capacity and manufacturing capacity of the plant,—that is in the complete system, but not in a plant. I was appraising a complete system here. I think that a plant ought to have a manufacturing capacity anywhere from 25 to 30 per cent in excess of its maximum day, and the holder capacity I think ought to be at least two-thirds of the maximum day. In other words, holders capacity ought to be at least one-half the manufacturing capacity in a system. In providing holder capacity, it is important to keep in mind economy of operation. Keeping that in mind, I do not know of any particular difference in the economy of operation if you were to put up four holders each of 400,000 cubic feet capacity or one holder of 1,600,000. One 1,600,000 could not have been operated at 21st Street in connection with the oil gas which was sent down to 14th Street; so that I would say it would have been most uneconomical to have four holders instead of one where one holder could not have been operated for oil gas at 14th Street. Of course, there is no oil gas going down there now, but the preparations were necessary for oil gas on the 1st of June. That does not mean that there was no occasion for four holders of 400,000 cubic feet capacity each there after June 1, 1923. The one holder of 1,600,000 cubic feet capacity would not serve the same purpose as the four holders of 400,000 cubic feet each capacity. Not since June [fol. 2320] 1, 1923 nor prior to June 1, 1923. I did not say you would require any at any time anywhere, but 21st Street does need four holders. I am speaking now as of all dates, it needs holders. It needs those four holders and we could substitute one of five million or one of four million or one of two million, but it has these four and it needs them. If they were taken away something else would have to be substituted. One holder of 1,600,000 cubic feet capacity would not serve the same purpose as four holders of 400,000 cubic feet capacity each, because if one holder had to be let down for repairs, you are out of a holder. You could let down these one at a time for repairs. There

is an advantage in that regard. Two holders each of 800,000 cubic feet capacity would serve the same purpose as four holders of an individual capacity of 400,000 cubic feet each. If you could get them on the land, which I do not think you could, I have not examined to determine whether or not that could be done. The problem has never been put to me until this minute. I will, if it is interesting to you, if you will give me a retainer. I do not remember when we last constructed or installed a gas storage holder of 400,000 cubic feet capacity for either the Consolidated Gas Company or the Brooklyn Union Gas Company. I would not say that I had done it at any time within the last ten years. I have no recollection on the subject one way or the other. I have put in some holders for the Brooklyn Union Gas Company within the last two or three years. [fol. 2321] None of them are as small as 400,000 or 4,000,000 cubic feet capacity. They are five to ten. Within the last two or three years I have put in holders for the Consolidated Gas Company of five million capacity. One gas storage holder at Astoria for a million in 1922. That is a relief holder.

[fol. 2322] New York, June 10, 1924.

Met pursuant to adjournment.

ALTEN S. MILLER, a witness on behalf of the plaintiff, recalled:

Redirect examination by Mr. Ransom:

In preparing my Exhibit No. 866 and 866 A directing attention to the summary sheets of those two exhibits and also to the subsequent computations and the summaries which are based thereon and are marked Plaintiff's Exhibits No. 871 and 874. I did not include all of the buildings inventoried and appraised by Mr. Burt at the Astoria Plant as shown by Mr. Burt's Exhibit No. 858. That is the figure for buildings given in Exhibits Nos. 866 and 866 A by me and used by me in my subsequent summaries is not the total cost of buildings shown by Mr. Burt's exhibit. I eliminated some of those buildings in making up my Ex-

hibit No. 866 and 866 A because I thought there might be some question about them and if there is any doubt whatever I wanted to resolve it against the company and I wanted to eliminate them although I did not personally question their usefulness. I eliminated any building as to which I found there was any question whatever as to their being used in the gas business. For example, I eliminated the building which is the residence of Mr. Woods, the chief engineer and the appurtenant structures at his house there at the plant. In my opinion it is very good company practice, where it is possible, to have the chief engineer live at the plant. But I have nevertheless excluded his house and the garage and the appurtenant structures. I included in my Exhibits No. 866 and 866 A only such buildings and structures as I found were used in the gas business and I have prepared a statement showing the buildings which were appraised by Mr. Burt and which were not included by me in my inventory and appraisal as of June 1, 1923, as to the Astoria Plant. This is the list and it shows the total of Mr. Burt's figure and the eliminations therefrom which I have made, thereby reaching the figure which I have used.

[fol. 2323] The paper, marked Plaintiff's Exhibit No. 875, is as follows:

Astoria Light, Heat & Power Company

Statements Showing Buildings Appraised by Mr. H. R. Burt, but not Included by Colonel Miller in His Inventory and Appraisal of Property Used in Gas Business as of June 1st, 1923

Total cost of Buildings inventoried and appraised by Mr. Burt, as of June 1st, 1923, as shown by Exhibit No. 858	$5,930,470 31
Cost of Buildings and Appurtenances included in above figures, but eliminated by Colonel Miller in preparing his Inventory and Appraisal of Property Used (Exhibit Nos. 866 and 866-A) and taken as a basis	

in subsequent computations and summaries (Exhibits Nos. 871-74):

Z-24.	Toluol Pump House	$3,676 45	
Z-25.	Toliol House	3,658 19	
X-M.	Brick, Stone and Frame House	21,202 50	
X-P.	Frame Stables and Sheds	2,720 64	
X-T.	Residence	26,828 40	
X-U.	Brick Stable	7,095 67	
X-V.	Gardener's Dwelling	2,668 63	
	Chicken House No. 102	450 34	
	Temp. Transformer House No. 140	166 08	
	Laboratory No. 141	561 45	
	Chicken House No. 142	1,110 18	
			70,138 53

Cost of Buildings and Appurtenances of the Astoria Light, Heat & Power Co., as appraised by Mr. H. R. Burt, as of June 1st, 1923, and included by Colonel Miller in Exhibit Nos. 866, 866-A, 871-74 ..... $5,860,331 78

Referring to the property of the Consolidated Gas Company, the buildings shown in my Exhibit No. 856 and 856-A and in my subsequent computations and summaries, which are Nos. 863 and 864 and 871 and 874, I did not include the total cost of the buildings of the Consolidated Gas Company as inventoried and appraised by Mr. Burt and shown [fol. 2324] in his Exhibits Nos. 838 and 838-A. I eliminated certain buildings and appurtenances or portions thereof which I found were not actually used in the Consolidated Gas Company's gas business, or which, for the purpose of this case, I thought it wise to eliminate on that ground. I have made up a schedule which shows those eliminations. In my Exhibits I carried in the total of Mr. Burt's buildings, less the eliminations of such buildings or portions thereof as I found were not used and useful in the company's gas business or regarding which there might be

some doubt. I applied the rule of excluding anything that was doubtful.

The paper, marked Plaintiff's Exhibit No. 876, is as follows:

The Consolidated Gas Company of New York

Statement showing Buildings appraised by Mr. H. R. Burt, but not included by Colonel Miller in his inventory and Appraisal of Property used in Gas Business as of June 1st, 1923, as shown by Exhibit Nos. 838, 838-A	$12,356,921 35
Cost of Buildings and Appurtenances included in above figures, but eliminated by Colonel Miller in preparing his Inventory and Appraisal of Property used (Exhibit Nos. 856 and 856-A) and taken as a basis in subsequent computations and summaries (Exhibit Nos. 863-64, 871-74):	
General Office Bldg., $5,469,220.30 @ 61.8%	3,379,978 15
General Office Annex, $52,952.03 @ 61.8%	32,724 35
West 131st St. Emergency Station, $6,608.91 @ 100%	6,608 91
	3,419,311 41
Cost of Buildings and Appurtenances of The Consolidated Gas Co. as appraised by Mr. H. R. Burt, as of June 1st, 1923, and included by Colonel Miller in Exhibit Nos. 856, 856-A, 863-64, 871-74	8,937,609 94

[fol. 2325] I did not carry into my exhibits with respect to the Consolidated Gas Company showing the inventory and appraisal as of June 1, 1923, in my subsequent computations and summaries, all of the value of land owned by the Consolidated Gas Company as of June 1, 1923, as testified to by Mr. Robert Huntley. I eliminated certain portions

of the value as testified to by Mr. Huntley. I have shown those eliminations in this summary. This shows the figure as to new land which I used in the way in which it was derived from the total testified to by Mr. Huntley.

The paper, marked Plaintiff's Exhibit No. 877, is as follows:

The Consolidated Gas Company of New York

Statement Showing Value of Land Testified to by Mr. Robert Huntley but not Included by Colonel Miller in His Inventory and Appraisal of Property Used in the Gas Business as of June 1, 1923

Total Value of Land Owned by the Consolidated Gas Company, as of June 1, 1923 as testified to by Mr. Robert Huntley	$14,282,055
Value of Land Included in the above Figure but eliminated by Colonel Miller in Preparing His Inventory and Apparisal of Property Used (Ex. No. 856) and taken as a Basis in subsequent computations and summaries (Ex. Nos. 863, 871) Block 870, Lots 60 and 47; $522,500 (*a* 61.8 per cent	322,905
Value of Land of the Consolidated Gas Co. as Testified to by Mr. Robert Huntley and Included in Exhibits above specified	13,950,150

In my Exhibit No. 856-A, which was the inventory, and appraisal based on the use of Mr. Stevens' figure in respect to land as to the parcels as to which he testified as to the value of the land, and on Mr. Huntley's figures as to the parcels [fol. 2326] concerning which Mr. Stevens did not testify, I prepared a summary sheet which shows the parcels as to which Mr. Huntley's figures were necessarily used in Exhibit No. 856-A, because those parcels were not covered by Mr. Stevens, and I have also shown the items Mr. Stevens' value which are not included in my Exhibit No. 856-A. The paper marked Plaintiff's Exhibit No. 878, is as follows:

The Consolidated Gas Company of New York

Statement Showing Derivation of and Items Eliminated from the Valuation of Land of the Consolidated Gas Company as of June 1st, 1923, as Shown in Exhibits No. 856-A et seq.

Land Appraised by Mr. F. K. Stevens as Owned by the Consolidated Gas Co., as of June 1st, 1923, and Included by Colonel Miller in His Inventory and Appraisal of Property Used (Ex. No. 856-A) and taken as a Basis in Subsequent Computations and Summaries (Ex. Nos. 864, 872, 874) (Parcels not Appraised by Mr. Stevens being Blocks 982, Lot 13, 988, Lot 1, 991, Lots 1 and 47; 1089, Lot 1, 1107, Lot 7)	$10,061,070
Land Appraised by Mr. Stevens but not Included by Colonel Miller in his Inventory and Appraisal of Property used (Ex. 856 A) and taken as a Basis in Subsequent Computations and Summaries (Ex. Nos. 864, 872, 874)	315,180
Total Value of the Land Appraised by Mr. Stevens	10,376,250
Land Appraised by Mr. F. K. Stevens as Owned by the Consolidated Gas Co. as of June 1st, 1923, and Included by Colonel Miller in Exhibits as above stated	10,061,070

Land Owned and Used by the Consolidated Gas Co. as of June 1st, 1923, and not Testified to by Mr. Stevens; therefore included by Colonel Miller, in the above stated Exhibits at the Figures Testified to by Mr. Robert Huntley, viz:

[fol. 2327]

Block 982, Lot 13	$437,500	
Block 988, Lot 1	680,000	
Block 991, Lot 1	361,755	
Block 991, Lot 47	67,800	
Block 1089, Lot 1 / Block 1107, Lot 1	2,000,000	
		$3,547,055
Value of Land as Shown by Colonel Miller in above stated Exhibits		$13,608,125

This is a reconciliation of the land figures in my Exhibit No. 856 A. In my inventory and appraisal of the apparatus and equipment of the Consolidated Gas Company for of the Astoria Light, Heat & Power Company, I included only such apparatus and equipment as was actually being used and I applied the same rule of resolving doubts against their inclusions of that.

Cross-examination.

By Mr. Donnelly:

With reference to Voucher No. 14,872, dated June 2, 1923, which calls, among other things, for Mr. Short's time and expenses overhauling No. 9½ exhausters, No. 31,-612-3 at 99th Street works, and the amount of which is $194.53, and which bears the endorsement "Repairs Miscellan-ous Equipment," that has been correctly stated. With reference to Voucher No. 15,186, which is dated June 12, 1923, from the P. H. & F. N. Roots Company and which calls for repairs for 9½ exhausters Nos. 31,612-3 and three other items and which is likewise endorsed "Repairs Steam Engines 99th Street Station," and the amount of which is $452 and to Voucher No. 23,196, which is dated August 15,

1923, from the P. H. & F. M. Roots Company, which calls for "To time and expenses repairing No. 9½ Roots Gas Exhausters Nos. 31,612-3, at East 99th Street" and the amount of which is $451.88 and which likewise bears the endorsement "Repairs Miscellaneous Equipment," those [fol. 2328] have been correctly stated. I included those items in Plaintiff's Exhibit 865 dealing with the 99th Street station. On page 41 the total of those three vouchers in my account is $487, and the vouchers total a good deal more than that, a lot of work was done before the 2nd of June. I put the conditions as of June 1st. The exhauster itself is $487.04. Then there was some work on the coupling and a gasket on the exhauster. The total amount of the work on the unit is $501.87.

With reference to Vouchers 15,186 and 23,196, No. 15,186 calling for $452 and No. 23,196 calling for $451.88, it is a fact, after looking at those, that those vouchers show that the work called for was done after June 1, 1923. The date of the bill indicated that the work was completed before the bill was rendered. Then there is a date on the voucher showing that it has been completed previous to some specified time. Take this Voucher 15,186, it shows the date of delivery of goods or work done June 12, 1923. On the back of the voucher there is a note by the plant superintendent that material was received in May. The front of the vouchers shows that this days time was May 18th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th and 29th.

Voucher No. 3426, which is dated January 14, 1924, from George Rahmann & Co., calling for 2 Belt each 49 8/12 feet 11 inches Double Belting Lap X Put above belts on endless $245, and which bears the endorsement, "Accounts charged, maintenance of steam engines", has been correctly stated. That shows the 99th Street station where the work was done. I have not included that in Plaintiff's Exhibit No. 865. This is January.

[fol. 2329] Voucher No. 18106 dated August 7, 1923, from H. C. Greenfield, calling for one piston rod—and then there follow some items after that—$259.25; which likewise bears the endorsement "Accounts charged: Repairs to Steam Engines 99th Street station" has been correctly stated. I have included no spare parts in my exhibit. These are merely spare parts for repairs and I have not included them

in my inventory or exhibits. A large number of spare parts which were in the plant were not included in my inventory. All the spare parts must fit the specific engines named. You could not buy spare parts just for an engine of a certain size, without having it specified. They would not be ordered unless they were for the purpose of replacing some worn out parts, when they wear out. They are always ordered in advance of wearing out.

Voucher No. 16823, dated July 5, 1923, from the Connelly Iron Sponge & Governor Company, calling for the installation on the 32" Governor to replace the present 20" valves, one set 36 new style Parabolic Aluminum Valves, equipped with Tobin Bronze Stem and Neckpiece fitted with bronze bearing, $375; endorsed "Accounts charged: Repairs miscellaneous equipment 63rd Street station" which is stated on Plaintiff's Exhibit No. 865 dealing with the 63rd Street station. That item is not included. It is a minor betterment.

Voucher No. 4207 dated January 23, 1924, from American Schaeffer & Bodenberg Corporation, calling for 1/8" Col. low pressure Rec. Gauge 0-90" of water—strip chart type—6" to an hour 2210", the gross amount of which is $154 and the [fol. 2330] net amount $150.90 endorsed "Accounts Charged: Maintenance of Water Gas Sets 99th Street station." The contents of that voucher have been correctly stated, but the letter is a little obscure here, and it is "Budenberg". Evidently they wrote an "o" and then wrote the "u" over it. I have not included in Plaintiff's Exhibit No. 865 the accidents or damages long subsequent to June 1st, and that is one of them, one of the casualties long subsequent to June 1st. They have to overhaul these gauges as they go out, and they would not carry it over into January, if there was anything the matter with it in June. There is no doubt that it was repaired in January and there is nothing on the voucher to indicate that the gauge was not in perfect condition on June 1st. There would not be anything on the voucher to indicate that there was an accident. I mean gauges get out of condition by reason of accidents rather than wearing out, particularly a recording gauge, unless it is just the cleaning of the clock. This is a spare gauge anyhow; it is an additional new gauge, a spare gauge. Gauges have to be very frequently overhauled; the

companies carry a great many spares and overhaul them for accidents and for the dust in the clocks. A generator house is a very dirty place. Gauges are frequently repaired, overhauled regularly; they have a great many spare ones, so they are continually being cleaned and overhauled. Allowance is made of $2,000 for overhauling and inspection of gauges and running machinery; that is on page 47 of my exhibit. I cannot identify this particular gauge among these items on page 47 of my exhibit, when it is a new gauge bought seven months after my exhibit is closed.

(Marked Defendant's Exhibit No. 28.)

[fol. 2331] Referring to page 49 of Plaintiff's Exhibit No. 865, it is a fact that the total amount that I have estimated for repairs at the 15th Street holder station is $1,199.64. I do not know that the company's books show that since June 1, 1923, the actual amount reported to have been expended for repairs to holders alone at the 15th Street station was $4,357.65, and the books may show expenditures previous. I did examine the books to see what if any entries had been made of expenditures for repairs subsequent to June 1, 1923, and I found materially less than $1,200. I know it was less because I put in an amount in excess of the expenditures for repairs. There may have been a great deal of damage. I do not know, I cannot remember all these accounts. In Plaintiff's Exhibit No. 865, I have not included anything for repairs to the 63rd Street Holder station. I did examine the books of the company to ascertain what if any repairs had been made at the 63rd Street Holder Station subsequent to June 1st, 1923. I do not recall the figures that I found for those repairs there. I have no record of it. It would not refresh my recollection as to the amount of repairs made at the 63rd Street Holder Station subsequent to June 1st, 1923, if I was told that the books showed over $3,000 expended for that purpose. I do not know how many consumers the Mutual Gas Light Company had before it was purchased by the Consolidated Gas Company. I do not know how much its annual sales were in 1922 for the year ended August 31st, 1922. I do not know how much the Mutual plant was bought for by the Consolidated Gas Company. I do not know if it was [fol. 2332] bought on the basis of the appraisal made by

me as of 1919 plus the book cost as of that date. When people tell me, I keep myself informed of such matters; when they do not tell me, it is not my business. I make no effort to find out in a case of this kind, where it is a friendly arrangement, I would not consider it would prove anything. I did not examine the books of the Consolidated Gas Company to ascertain how much per meter it had cost them to annex the business during any period. I did examine the books of the East River Gas Company to ascertain the same information. I have not since the early days of the East River Gas Company. The East River Company operated at that time in Long Island City, over a very sparsely settled territory. It operated on Manhattan Island a short time after I was connected with it, in 1895 or 1896. It cost the East River Gas Company to annex its business anywhere from $30 to $50 a meter.

In the case of the Astoria Tunnel, interest during construction is at the rate of 8 per cent on an average period of two years for the construction of the tunnel. Interest on organization is for a period of four years; and interest on land is for a period of four years. The Ravenswood Tunnel, the interest on the construction items is for a period of half of two years. The interest on organization and land is for two years. Taxes during the construction for the Astoria Tunnel, four years; and for the Ravenswood Tunnel two years. That is taxes on land. Taxes on improvements for the Astoria land, one year and for the Ravenswood Tunnel a half year. For the cost of financing I assumed substantially 5 per cent of the entire [fol. 2333] project. That is engineering, superintendence and general contractor's expense and profit 13 per cent. That was on the head houses and the tunnel equipment. In the case of the tunnel itself I figured in addition to the special tunnel engineering, one per cent for engineering, adopting that to the complete properties. The engineering, Superintendence and General Contractor's Expense and Profit apply only to the head houses and the tunnel equipment and mains. After that I add in the tunnels and figures just 1 per cent for engineering. No contracting on that, because that has all been cared for by Mr. Davies in his estimate. There is only one per cent on the engineering for the tunnel, which, as I say, would involve

the adaptation of those tunnels to the whole scheme its general engineering scheme. Of the 13 per cent general contractor's expense runs 6 or 7 per cent. In the construction of head houses, tunnel equipment and mains in the tunnel, I assumed the whole administration and force of the general contractory would be necessary in connection with such work. The contracting work has to start the whole administration—the selling, and so forth. There is a certain local office force, that he has. Prior to construction I assumed in the construction of these head houses, tunnel equipment and mains in the tunnel. The organization and development of the entire East River Company as pro rated to this part of the work. A great deal of preliminary work necessary and a great deal of trouble with the land under water in these cases.

[fol. 2334] In Exhibit 371, and page 1 thereof, I assumed a period of two years for overhead all the way through on each of the items. That is the 48 inch transfer main. I assumed a period of two years for the construction of that main. With reference to the item Engineering, Superintendence and General Contractor's Expense and Profit my percentages were the same there as they were for the same item in Plaintiff's Exhibit 868. I assumed the pro rated part of the general contractor's expense on the entire Consolidated Gas Company during the progress of the main laying work, and that likewise applies to the following items. I assumed the entire organization and development necessary prior to the beginning of construction of the Consolidated Gas Company would have to be done before they began to lay this 48 inch transfer main. I did not necessarily assume that the laying of all of the mains set forth in Exhibit 871 would begin immediately upon the completion of the plant and equipment. The construction would go along at the same time as the plant and equipment. I have taken care of the overheads pro rated with the simultaneous construction. It has already been taken care of. Each part of it takes care of its own overheads. If you want to get them down here, it will increase the Consolidated appraisal. Do not bid this down. Bid it up. This is a deduction and not an addition.

[fol. 2335] New York, June 11, 1924.

Met pursuant to adjournment.

HERBERT C. DAVIDSON, called as a witness in behalf of the plaintiff, being duly sworn, testified as follows:

Direct examination.

By Mr. Ransom:

I reside at Montclair, New Jersey. I am Assistant Secretary of the Consolidated Gas Company of New York. I assist the secretary in the performance of his duties as an executive of the company and under his general direction and supervision I have charge of the accounting work and the accounts of the company. That is, under the direction of Mr. Brundage as secretary, I have immediate charge of the accounts and accounting work. I have been connected with the Consolidated Gas Company since January 1, 1919. Before that time I was associated with the Standard Gas Light Company from October, 1913, until December 1918.

I was graduated from Harvard College, in the Class of 1904. Upon graduation, I entered the employ of the Library Bureau, manufacturers of office equipment and filing system, with offices in the principal cities of this country and abroad, and was associated with that company, in Boston and New York, until 1911, during which period my experience covered nearly every branch of the business, including accounting, purchasing, manufacturing, shipping and selling. At the time of consolidating its three Boston factories into one plant at Cambridge in 1908, I became manager of the Cambridge Works, employing approximately 500 people. My duties in charge of the plant comprised the supervision of manufacturing, warehousing and [fol. 2336] shipping, the factory cost accounting, the purchase of all materials used at the plant, other than certain materials purchased under contract, and the employment of labor. I was also sent abroad by the company in 1908 to study the conditions and requirements of its London factory and its business in England. During the year 1908, I was appointed traffic manager of the company, and had charge of all transportation matters, both domestic and foreign of the eleven factories of the company. In 1910 I

was transferred to New York to become Executive Manager of the New York Office. I resigned in 1911 to become associated, as treasurer, with the H. E. Davidson Company, engaged in advertising and accounting service, having full charge of the accounts of the company. I also assisted in the field, in the accounting services rendered by the company, and in the advertising branch, and personally purchased advertising space aggregating over a half a million dollars a year. In October of 1913 I became associated with the Standard Gas Light Company as Assistant to the President, and was engaged in the study of various accounting problems of that company, including the organization of the accounts of the Meter and Appliance Repair Shop. I also had charge, from 1915 to 1918, under the direction of the President, of the accounts of the Municipal Lighting Company. In January of 1919, I entered the employ of the Consolidated Gas Company, as Assistant to the Vice-President and Secretary, and in addition to other [fol. 2337] accounting matters assigned to me, I devoted a considerable part of my time to the rate case then in course of trial before this Court, and assisted in the preparation of many of the tabulations for that case. In October of 1920, I was appointed Controller of the company, directly in charge of the Accounting Department and of the accounts of the company under the general direction of the Secretary, which responsibilities I still have. In June, 1923, I was appointed Assi-tant Secretary. Since 1921, I have been assistant Controller of the Astoria Light, Heat and Power Company, in direct charge, under the Secretary, of its accounts and its Accounting Department staff, and I am also Treasurer of the New York and Queens Gas Company, having succeeded the late Mr. Robert A. Carter in that office. I am a member of the Auditing Committees appointed by the Boards of Directors of the Bronx Gas & Electric Company, Astoria Light, Heat & Power Company, Standard Gas Light Company, Central Union Gas Company, Northern Union Gas Company, National Coke & Coal Company and the Brush Electric Illuminating Company. I am a member of the American Gas Association, and as Vice-Chairman of its Accounting Section, and am President of the Society of Gas & Electric Accountants.
[fol. 2338] I have produced the general ledgers of the

Consolidated Gas Company for the years 1917, 1918, 1919, 1920 and 1921 which comprise two books numbered Nos. 5 and 6. General Ledger No. 5 includes the years 1917, 1918 and 1919, and General Ledger No. 6 includes the years 1920 and 1921. General Ledger No. 5 was marked Exhibit 754 and General Ledger No. 6 includes the year 1920 and 1921. General Ledger No. 5 was marked Exhibit 754 and General Ledger No. 6 was marked Exhibit 689, in respect of Fixed Capital Accounts in connection with Mr. Brundage's examination. These ledgers show the accounts of the revenues and expenses of the Consolidated Company during the period from January 1, 1917, to December 31, 1921.

Statement entitled "Consolidated Gas Company of New York, Statement of Deficiency in Earnings Below an 8 per cent Return upon the property of the Company used and Useful in the Gas Business during the Period from January 1, 1917 to December 31, 1921," (marked Plaintiff's Exhibit No. 879 for identification.)

Referring now to Exhibit 879 for identification, I prepared this statement. The first sheet of this proposed exhibit is a statement of the deficiency in earnings below an 8 per cent return during the period from January 1, 1917, to December 31, 1921, upon the actual investment of the company in its property. I used the actual investment as shown by the company's books, in respect of the investment [fol. 2339] of the company in such property. Those are the figures which have been shown here in Mr. Brundage's exhibits. This statement here is based upon the fixed capital account as shown by the company's ledger. The figures with respect to the column which you call "average working capital" were taken from the books of the company—the actual investment in each year. The figures as to the actual income or loss were taken from the books of the company.

Referring to the year 1920, my figure of income or loss includes revenues in excess of the statutory rate and represents the total revenues from the sales of gas at the rates actually charged and the same thing is true with respect to the figure given for the year 1921. I obtained the figure in the second column, which is headed, "Average as of June 30th" in each year, referring to the fixed capital by adopting an average as of June 30th by averaging the balance

at the beginning and the end of each year. Taking, for instance, the first two items in Column 1, being the balance in fixed capital as of December 31, 1916, and 1917, respectively, I added the two items together and divided by 2, thereby taking the average during the year. The working capital is an average during the year. Column 4, which is headed "Total" in respect of capital is the sum of my columns 2 and 3, which are headed "Average as of June 30th," and "Average Working Capital." Column 6 is a computation made by me showing eight per cent of the total shown in [fol. 2340] column 4 for each year. Column 6 represents an 8 per cent return upon the actual investment of the company during this period, and as there was an actual, direct operating loss, the total deficiency is the sum of the two. I have added up in column 5 the sums which in certain years represented actual income and in certain years which represented loss, and obtained a figure in column 5. If the aggregate of column 5 had resulted in a net income, that would have been subtracted from column 5; but as the aggregate of column 5 is a direct loss, it is necessarily added to column 6 to state the total deficiency during the period.

On the second sheet of this proposed Exhibit, that is prepared the same way, except that I have included the deficiency prior to the year in question: that is, the previous deficiency. So that this statement computes the deficiency in earnings below an 8 per cent return during this 5-year period upon the basis of the investment, but taking into account the deficiency in earnings. It starts at the beginning of 1917 and goes through 1921 and I have on that basis computed the deficiency below an 8 per cent return and then the cumulative deficiency, and this sheet is likewise made up on a basis of crediting in our income account their revenue from sales of gas in excess of the statutory rates in the years indicated. This was prepared from the same sources. The changes that I have indicated are computations of my own.

I have prepared a third sheet which shows a statement [fol. 2341] of deficiency in earnings below an 8 per cent return during the period from January 1, 1917, to December 31, 1921, upon the reproduction cost as of June 1, 1923 of the property of the company, taking into account additions to and withdrawals from fixed capital at the actual

cost thereof and that reproduction cost is the figure which has been proved in evidence through Colonel Miller based on Exhibit 856, I think is the number, and in the same way as I did in the first sheet, I have computed my deficiency in my return below an 8 per cent return.

The fourth sheet is a statement of the deficiency in earning below an 8 per cent return during the same period based on reproduction cost with additions and withdrawals made up in the same way and from the same sources as Sheet 3, except taking into account the deficiency earnings to get a figure representing a cumulative deficiency. In other words, Sheet 4 corresponds to Sheet 2 except that [fol. 2342] it is based upon reproduction cost and additions and withdrawals. I have here again on Sheets 3 and 4 taken into our income in the respective years revenues from sales of gas in excess of statutory rates; the actual income is the same on all four schedules.

(Plaintiff's Exhibit No. 879 for Identification, offered in evidence, but not received, to which ruling the plaintiff excepts.) (Portions of General Ledgers of Consolidated Gas Company Nos. 5 and 6, setting forth accounts of revenues and expenses, marked Plaintiff's Exhibit Nos. 880 and 881 for identification, offered in evidence but not received, to which ruling the plaintiff excepts.)

(Statement marked as Plaintiff's Exhibit No. 882 for identification, entitled "Consolidated Gas Company of New York. Statement of deficiency in earnings during the period from January 1, 1917, to December 31, 1921, upon [fol. 2343] the combined operations of the Consolidated Gas Company of New York, New Amsterdam Gas Company, East River Gas Company of Long Island City, Central Union Gas Company, Northern Union Gas Company, Standard Gas Light Company and New York Mutual Gas Light Company, below an 8 per cent return upon the Investment in Property used and useful in the Gas Business, found by the Public Service Commission as of June 30, 1922, in Case No. 79, taking into account Additions to and withdrawals from Fixed Capital at the Actual Cost thereof.")

By Mr. Ransom:

Plaintiff's Exhibit No. 879, for identification, is true and correct, prepared in the manner to which I have testified, and true and correct according to the books and records which have been here produced and offered.

I prepared Plaintiff's Exhibit No. 882 for Identification, from the records of the Consolidated Gas Company, in the possession of the Secretary. These figures in respect of investment conform to the figures found by the Public Service Commission as of June 30, 1922, in its order and opinion in Case No. 79, taking into account the additions and withdrawals at the actual books' figures. The date of that order was August 30, 1922.

I am on the Auditing Committee of the account of any of these companies indicated here. I am a member of the Auditing Committee of the Standard Gas Light Company, of the Northern Union and Central Union companies; and the Mutual Company, of course, no longer exists. I have [fol. 2344] included in this statement the Mutual Company during the period when it existed as an independent company. It existed as an independent company during all of this period. I prepared this sheet in the same manner as Sheets 1 and 2 of Plaintiff's Exhibit No. 879 for Identification, so far as showing the investment and the averages of June 30th and the actual income and loss, and the calculation of the 8 per cent on the first sheet, and in the second sheet the same thing except taking into account the deficiency so as to compute a cumulative deficiency. These are prepared on the same basis as the first two sheets of Plaintiff's Exhibit No. 879 for identification. That is, as to method I mean. This exhibit to my knowledge is true and correct upon the basis which I have stated. Plaintiff's Exhibit No. 882 for Identification is prepared from records of the Consolidated Gas Company which to my knowledge have been available to and used by the defendants in connection with the preparation for trial in gas cases.

(Plaintiff's Exhibit No. 882 for identification offered in evidence, but not received, to which ruling plaintiff excepts.)

In preparing Plaintiff's Exhibit No. 882 for Identification, inter-company payments for the use of property are

eliminated. That is, where any properties owned by any of the indicated companies are used by two or more companies or are used in the service of a company other than the company which owns them, and payments are made therefor on a basis of the Woods report. All such charges are excluded from this statement and all such properties [fol. 2345] are put into the rate base. That is, into the column headed "Investment."

I have prepared a statement endorsed, "Consolidated Gas Company of New York. Net Additions to Fixed Capital Based on Original Cost applicable to the Gas Business of the Company during the period June 1, 1923, to December 31, 1923." I prepared this statement from the books of the plaintiff company, that are in evidence and I took into consideration the classification of the property as testified to by Mr. Alrich and by Mr. Brundage and as set forth in the exhibits prepared by them. I subdivided those net additions as shown by the books between the classifications of property used and property not used, as shown by Mr. Alrich's and Mr. Brundage's exhibits.

Referring to the second sheet which is entitled "Original Cost of Net Additions to Real Estate including Improvements Thereon other than Manufacturing Plants and Holder Stations during the Period from June 1, 1923, to December 31, 1923," this second sheet being marked Schedule 1, I have set forth by stations, the additions, withdrawals and net additions to real estate, subdivided to show separately the property used in the gas business as testified to by Mr. Brundage and Mr. Alrich and to show property not claimed in the gas business in this suit. Taking the first line, for example, in the second column of figures, or rather opposite "14th Street Station," the withdrawal of $1,113,566.84 relates to the original cost of land at the [fol. 2346] 14th Street Station which was used in the gas business until the time of its sale on October 30, 1923, and the withdrawal is therefore a withdrawal from property used in the gas business. On that same line the item $319,060, shown in the fifth column under "Withdrawals of Property not claimed in the Gas Business," relates to property taken in condemnation by the City of New York in 1907 for which payment was made and entry made taking it out of our fixed capital account subsequent to June 1,

1923; but inasmuch as this property was excluded in Mr. Brundage's schedule as of June 1, 1923, taking it out of the capital account on the books, it bears no relation to the property used in the gas business. That is, that property, although it had been for some years out of the possession of the company, had not been paid for by the city and had therefore not been credited on the books, but had been excluded from the statement of property used and useful in the gas business as of June 1st. The total of this schedule shows net additions in the property used in the gas business of $363,000, whereas there was a decrease in the property not claimed of $424,000-odd, resulting in a net decrease in the total real estate owned, as shown by the books of the company, of $60,585.43, which is the figure shown in Plaintiff's Exhibit No. 820, prepared and put in by Mr. Brundage. This sheet takes Plaintiff's Exhibit No. 820 and brings [fol. 2347] the same facts down to December 31, 1923, distinguishing between the property used in the gas business and the property not claimed to be used in the gas business. This figure to which I have testified, for example, at the 14th Street Station, as to the amounts withdrawn from property used in the gas business, exclusive of some part of the real estate that had previously been included within the 14th Street Station but which when the station as such was discontinued, was transferred to real estate accounts called 15th Street station and 17th Street yard; it is exclusive of that transfer, which would merely set up two additional items in the schedule, and make a transfer from one to the other, and would not affect the total; so I did not feel it was necessary to include that in this statement of net additions. The 15th Street holder station and the 17th Street yard continuing in the gas business and they were formerly buried in the figures of the 14th Street station.

On the third page of my schedule, which third page is called Schedule 2 and is headed, "Original Cost of Net Additions to Manufacturing Plant and Holder Stations during the Period from June 1, 1923, December 31, 1923," this statement sets forth additions and withdrawals and net additions to manufacturing plant, in a manner similar to the statement of real estate upon the previous sheet, and shows the net additions to property used in the gas busi-

[fol. 2348] ness by stations, also to the property not claimed in the gas business by stations, this classification following the testimony and exhibits of Mr. Alrich and Mr. Brundage, and leads down to a total net additions to property in the gas business during this period of $511,044.53, and a decrease in the property not claimed in the gas business of $63,432.83, making a total net increase of $447,611.70, which is the figure shown on Plaintiff's Exhibit No. 821 presented by Mr. Brundage. In other words, this schedule gives the facts according to the books for bringing Plaintiff's Exhibit No. 821 down to December 31, 1923, with the divisions between property used in the gas business and property not claimed in this case to be used in the gas business, the divisions made according to the classifications of property Mr. Alrich and Mr. Brundage.

The first sheet of this schedule on Net Additions to Capital is the summary of all items of fixed capital, the first two items being the totals applicable to the gas business carried forward from the succeeding sheets; that is the figures shown opposite "Real Estate and Plant" are the totals carried forward from the supplementary schedules. As to the balance of the items they are the amounts shown by the books and also set forth in Exhibits 822 and 823, prepared by Mr. Brundage; and relates only to property which is used in the gas business. As to real estate and plant, I have shown additions and withdrawals and then computed [fol. 2349] the net additions according to my schedules 1 and 2 which are a part of this exhibit. That leads down to a total net of additions per books applicable to the property used in the gas business of $1,553,109.93. That is taking into account the additions per books for mains and services, and so forth, the additions and withdrawals and the net additions as per books and I have indicated, in connection with each of these items, mains and services, meters, cocks and connections, furnaces and fixtures, tools and accessories, organization, etc.—the exhibit in which the total of those items up to June 1, 1923, were shown. I have deducted in this tabulation from the net additions as shown by the books for a change in category of the property of the 42nd Street station, that is Block 1090, Lot 23, which was included in the property used and useful in the gas business as of June 1, 1923, but was not claimed to be used and useful after the

sale of the balance of the property at the 42nd Street plant on October 31, 1923, so that that item represents a change in category during this period. The original cost of that land in question was $61,662.40, which makes a net increase in investment in property used in the gas business during this period from June 1st to December 31st, 1923, of $1,491,-447.53. That is this deduction which I made with respect to the parcel of land which is Block 1090, Lot 23, which the company owns in West 42nd Street, was made by me in conjunction with Mr. Alrich's testimony upon the sale of this land, of this parcel on the west side of 42nd Street, [fol. 2350] that ceased to be used and useful in the gas business, although continuing in the company's ownership, and that is the only change in the testimony shown in this period.

(Statement of "Net Additions to Fixed Capital based on Original Cost Applicable to the Gas Business of the Company, June 1, 1923, to December 31, 1923," received in evidence and marked Plaintiff's Exhibit No. 883.)

The annual reports of the Consolidated Gas Company to the Public Service Commission of 1922 and 1923 were prepared under my immediate direction, acting under the general instructions and supervision of the Secretary of the Company. I am familiar with the contents of those reports and the details and the data reported therein as taken from the books of account and records of the company and with Plaintiff's Exhibits Nos. 813 to 818 inclusive, which were placed in evidence through Mr. Teele and which are statements of the cost of production and distribution of gas of the Consolidated Gas Company for the years 1922 and 1923. In the preparation of Mr. Teele's Exhibits 813 and 816, I was, from time to time, called upon to furnish him with the various books of account and records of the Consolidated Gas Company. Since Plaintiff's Exhibits Nos. 813 and 816 were received in evidence I made a comparison of those with the books of account of the company. I have also made a comparison with the annual reports to the Public Service Commission, Plaintiff's Exhibits Nos. 811 and 812, with Mr. Teele's Exhibits. There are a number of differences between the Uniform System of Accounts and the form of the annual report. The Public Service Commission furnishes

us the form of annual report. It is not a form which we [fol. 2351] prescribe or control. We are not in any way responsible for the grouping of items in that form. We follow the form provided and in order to make up our report to the Commission we take the items as shown on our books and, for the purposes of the report, group them as prescribed in the report form. The major variations or differences in classification between the classification of items in the report forms and the classification of items in the Teele exhibits are due to differences in grouping and to the exclusion of certain property owned by the company from the property used in the gas business in Mr. Teele's schedules; whereas, there is no such distinction made in the annual report to the Public Service Commission. I mean the annual report includes all the property of the company, gas and non-gas, and all revenues of the company, whether from gas or non-gas sources, and Mr. Teele excluded certain items of revenues and express applicable to non-gas property. His report relates only to the property and revenue and operating costs of gas property and that resulted, of course, in the exclusion of certain items. That is, there are some differences in the grouping of items between the report form of the Public Service Commission and the form used in the exhibits. There is no such differentiation or distinction between properties claimed to be used and useful in the gas business made or required to be made in the report form to the Public Service Commission.

[fol. 2352] I have, for convenience in this case, prepared a statement entitled, "Statement of differences in classification in re operating expenses and miscellaneous operating revenue for the year 1922 between (1) the form based on the Uniform System of Accounts used by Mr. Teele in his schedule of Cost of Production and Distribution for the Year ended December 31, 1922, Exhibit No. 813, and (2) the form of annual report furnished by the Public Service Commission as filed by the company with the Commission for the year ended December 31, 1922, Exhibit No. 811. In that I have shown in the left hand column the various items of the Teele schedules or the various classifications of items in the Teele schedules, and then the figure given in the Teele schedule, Exhibit No. 813. I have shown the page and

line reference in the report to the figure set forth, corresponding to the item shown in the Teele schedule. I have, and at the extreme right, by reference numbers, made reference to detailed statements explaining briefly the differences as to each item. I have shown the reason for that variation between the item given in the report at the line indicated and the figure given by Mr. Teele. Taking for instance, the first four items under the caption "Cost of production," there were just two elements involved, but referring to the generator fuel, the total as shown by Mr. Teele's schedule, Exhibit No. 813, is $107,543.95 less than the amount reported in the annual report to the Public [fol. 2353] Service Commission for the year 1922 for the item "generator fuel." This difference is explained in the notes on the fourth page to consist of $107,414.89, of labor of handling coal, which, according to the provisions of the Uniform System of Accounts, is grouped with the fuel, whereas, Mr. Teele has set it forth in a separate item plus a small item, of $129.06, representing water gas tar used in the generators, which was an experimental proposition that the company reported under generator fuel in the Public Service Commission report, but Mr. Teele, in his analysis of our accounts, transferred it to sundry supplies. In other words, with respect to the item of labor handling, the situation is this: that in both Mr. Teele's exhibit and the Public Service Commission's report, for example, there is an item of generator fuel, but there are different sums set forth opposite that item in the two exhibits, and the reason for that is that our report to the Public Service Commission includes labor, and so forth, handling of fuel in the generator fuel figure itself. And Mr. Teele's exhibit, as shown by the first sheet of this exhibit, takes labor, cartage, and so forth, handling, that is set forth separately, as I have noted in my third note on the "remarks" page of this exhibit, and the same thing with boiler fuel, the Public Service Commission classification includes the labor, cartage, and handling of the fuel item itself which Mr. Teele has set it up as a separate item. That is, in other words, [fol. 2354] there is no difference in the totals, but Mr. Teele has a subdivision that is not called for by the report form. In the same way, I have shown where differences in classification occur between the Teele exhibit and the report filed

with the Commission on the report form. As to the item of taxes, I referred to the supplemental schedule supporting Exhibit No. 813 put in by Mr. Teele, which is Exhibit No. 814, as to the year 1922. That is, in the report to the Public Service Commission, all taxes paid appear as an item, irrespective of whether they are attributable to gas property or non-gas property. I have shown the subdivision which Mr. Teele made between taxes attributable to gas property and operations and taxes not so attributable, as explained in Item No. 28, of "remarks." With respect to each of the different classes of taxes, there is no difference in the facts shown in the Public Service Commission report and the facts shown in the Teele exhibits, leaving out the eliminations made on account of certain property not being used. The difference between the Teele exhibit and the report forms being differences of classification and, in the second place, due to the fact that Mr. Teele followed the company's eliminations for the purposes of this case of certain property in operation. Those are the only differences. This is a statement of such differences and a guide to the places at which the corresponding items may be found in the Teele exhibits.

I have made up in the same way a similar statement with respect to 1923, showing the differences in classification and the eliminations on account of property not used in the gas [fol. 2355] business, between the Teele Exhibit 816 and the report to the Public Service Commission which was Exhibit 812 for that year.

(Two statements as to operating expenses for 1922 and for 1923, received in evidence, and marked, respectively, Plaintiff's Exhibit Nos. 884 and 885.)

Cross-examination by Mr. Ransom:

Referring to Plaintiff's Exhibits Nos 884 and 885, I want to say that neither Mr. Teele's reports nor the Public Service Commission's report follow the books absolutely. There may be minor variations that I do not recall to mind but, generally speaking, I think Mr. Teele has followed the books fairly closely. In respect to classifications, I might say that the details are set forth in the books in a number of accounts and it is merely a matter of perhaps grouping

two accounts in that item in one case and three accounts in the other, so it is difficult to say that either does or does not follow the books. There are certain changes made in the annual report form. Referring to Item No. 10 on Exhibit No. 884, under "remarks," and the caption, "Less items excluded from gas operations by Mr. Teele in Exhibit No. 813," and then follow three items, the total of which is $1,914.10, the item of repairs to works and station structures, for instance, is an account applicable to gas operations; all of these three items would be shown under gas operation in the books. Item 9, "Less items of gas storage Inwood station, excluded by Mr. Teele in Exhibit No. 813" as not applicable to gas operations, is the same item; there were three small items included in our gas operations that [fol. 2356] Mr. Teele threw out. The aggregate of them was $1,900. That is the Inwood holder not being claimed for the purposes of this case as used in the gas business. Item 30 in Plaintiff's Exhibit No. 884, which states taxes applicable to property not claimed as set forth in Item 8, $30,235.95, "Less item excluded by Mr. Teele in Exhibit No. 813"—that item is set forth in detail in the summary under the summary item 28, taxes. Now, that particular figure of $30,235.95 will not appear as such on the company's books. It is made up of a number of items that are shown in the remarks under the number 28. It is all set forth on the two preceding pages. The taxes set forth on the books represent the basis of classification adopted by the company which does not go into the refinement of individual parcels excluded in this case. All the real estate taxes are included there as operating taxes or as applicable to property incidentally rented. We have not made an exclusion, as Mr. Teele did, of certain parcels of land, and therefore the taxes on them are included in the gas operations on the books.

By the Master:

We have not subdivided this item of $30,235.95 between operating and non-operating properties as set forth under my No. 28, remarks on taxes. The totals of each kind of taxes are shown on the books, but the figure of $10,000—for instance, take real estate, $10,492.89, that represents certain items taken out by Mr. Teele that will not be grouped

that way in the books because we do not draw such a fine line in the books between the property actually used and not used as is drawn for the purpose of this suit. I do not [fol. 2357] know if I answered your question as you intended it.

By Mr. Donnelly:

Assuming that the conditions existed in 1923 similar to the items that you refer to in 1922, they would be treated similarly in Plaintiff's Exhibit No. 885. I would want to go through each item before answering the question that that was so.

(Voucher No. 18,827, dated July 31, 1923, received and marked Defendant's Exhibit No. 29.)

(Voucher No. 18,992, dated July 31, 1923, received and marked Defendants' Exhibit No. 30.)

(Voucher No. 20,825, dated July 31, 1923, received and marked Defendants' Exhibit No. 31.)

(Voucher No. 20,826, dated July 31, 1923, received and marked Defendants' Exhibit No. 32.)

(Voucher No. 25,675, dated November 2, 1923, received and marked Defendants' Exhibit No. 33.)

(Voucher No. 4,013, dated February 18, 1924, received and marked Deefndants' Exhibit No. 34.)

(Voucher No. 20,586, dated September 6, 1923, received and marked Defendants' Exhibit No. 35.)

(Voucher No. 19,345, dated August 22, 1923, received and marked Defendants' Exhibit No. 36.)

(Voucher No. 17,326, dated July 26, 1923, received and marked Defendants' Exhibit No. 37.)

(Voucher No. 1262, dated December 12, 1923, received and marked Defendants' Exhibit No. 38.)

[fol. 2358] Redirect examination by Mr. Ransom:

Both of the reports to the Public Service Commission and the Teele Exhibit accurately set forth the contents of the books, assuming the eliminations of property not claimed in this case to be used and useful in the gas business.

[fol. 2359] June 12, 1924.

Met pursuant to adjournment.

Plaintiff offered in evidence, and there were received, and marked Plaintiff's Exhibit No. 865, the judgment roll in the case of Consolidated Gas Company of New York, against Charles D. Newton, as Attorney General of the State of New York, Edward Swann, as District Attorney for the County of New York, State of New York, Lewis Nixon constituting the Public Service Commission of the State of New York, No. E-15-358, filed in the District Court of the United States for the Southern District of New York, embracing the following:

Bill of Complaint, filed January 16, 1919, and Writ of Subpœna and return of personal service. Appearances entered for the original defendants and orders of substitution for counsel for the defendants and for Public Service Commissioners as original parties.

Answers to Bill of Complaint filed February 8th and 17th, and May 24, 1919.

Order entered May 16, 1919 denying motion of the defendant the District Attorney of the County of New York to dismiss the Complaint.

Order filed May 16, 1919, appointing Abraham S. Gilbert, Esq., as Special Master to take testimony and evidence make needed computation and find the facts and make report to the court.

Oath of Special Master filed June 20, 1919.

Report and Opinion of Special Master filed May 6, 1920.

Exceptions to Special Master's Report filed by the defendants May 25, 1920.

Decree filed and entered, June 29, 1920, in favor of the plaintiff, granting a temporary injunction.

[fol. 2360] Decree and amended decree entered August 4th and 11th, 1920, in favor of the plaintiff, ruling on the exceptions to the Special Master's report and adjudging that Chapter 125 of the Laws of 1906, of the State of New York, is invalid in certain respects, and enjoining the defendants, and accompanying opinions by Judge Learned Hand.

Appeals taken from the decree on September 9, 1920 by the defendants and Nov. 10, 1920 by the complainant.

Decree filed and entered February 29, 1921, denying motion of the defendants to modify in certain respects the decree filed August 4, 1920 and further amending said decree.

Appeal taken by complainant March 7, 1921, to the Supreme Court of the United States from the decree of February 28, 1921.

Decree filed and entered June 23, 1921, amending the decree filed August 4, 1920, as amended by limiting the amount of bonds which the Special Master may accept from any one surety company.

Three mandates of the Supreme Court of the United States filed March 15, 1922:

(1) Affirming the decree of the District Court filed February 28, 1921.

(2) Modifying the decrees filed August 4, and 11, 1920, and as so modified affirming same, and

(3) Modifying the final and supplemental decrees filed August 4 and 11, 1920, and as so modified, affirming same.

Decree of District Court filed and entered March 15, 1922:
[fol. 2361] (1) Making the judgment of the United States Supreme Court;

(2) Amending the final decree of the District Court filed August 11, 1920, as amended by the decree filed February 28, 1921;

(3) Amending the said decrees in certain particulars;

(4) Adjudging that the Special Master shall pay and deliver over to the plaintiff certain funds;

(5) Adjudging that the Special Master was authorized to retain certain compensation; and

(6) Adjudging that all surety bonds filed with the Clerk of the Court by the complainant be cancelled.

Judgment for costs entered July 27, 1923.

[fol. 2362] June 16, 1924.

George E. Woods, recalled by the plaintiff, testified as follows:

Direct examination by Mr. Ransom:

I have made a study and examination as to the work and the cost necessary to develop the operations and business of the Consolidated Gas Company as a going concern be-

yond and subsequent to the construction of the gas plants and the installation of the distributing system, devoted to the use of its consumers. I have formed an opinion as to what it would cost, as of June 1, 1923 to reproduce this development of the operations and business of the Consolidated Company as a going concern; exclusive of the cost of construction of plants and distributing system, and including in that cost, the undistributed structural costs as well as the inventoried items. I have set forth in schedule what such reproduction cost of those elements and advantages would be, and the elements or factors entering therein. This schedule which you showed me is the one which I prepared, embodying the results of my study of those items, and if you asked me categorical questions as to each of these statements and figures set forth in this schedule, my answers would be the statements and figures therein set forth. They represent my opinion and judgment in the light of my experience. Insofar as statements are herein set out as taken from the books of the company; I personally checked them, and I know that this statement in respect of statements of fact is true and correct on that basis and in respect to matters of opinion and judgment it represents my opinion and judgment. In this study, I have not undertaken to cover all the elements which might or are at times included in what is called going value. I think there are others which I have not included in this statement which would be considered as expenses in building up a going concern. But with respect to the kind of work and [fol. 2363] the present replacement cost of the work, necessary to develop the operations and business of the company as a going concern beyond the construction system, this represents my computation of what it would cost as of June 1, 1923: The paper submitted as the testimony of Mr. Woods is spread upon the record as the testimony of the witness, as follows:

Statement of the Going Value of the Consolidated Gas Company as of June 1st, 1923, Prepared by George E. Woods, Chief Engineer of the Consolidated Gas Company

In order to place the Consolidated Gas Company on the basis of a going concern as of June 1, 1923, engaged in fur-

nishing gas to its consumers, and having developed the operations and business of the Company beyond the construction of the gas plants and the installation of the distributing system devoted to the use of its consumers existing as of June 1, 1923, it would be necessary for the Company, in addition to constructing the plants and installing the distributing systems which are covered by the inventories and appraisals of Colonel Alten S. Miller, et al. in evidence in the pending case of the Consolidated Gas Company v. Prendergast, et al., to do certain work and incur certain costs which are more specifically described below:

1st. There would be necessary, canvassing, accounting, demonstrating, experimenting with appliances, storing and displaying appliances, advertising and setting of meters and appliances, the cost of none of which has been included in the inventories and appraisals in evidence in this action.

2nd. There would be incurred the additional cost resulting from the operation of a new plant and system which will require some changes as to method of operation, alterations in construction, training a corps of employees and overcoming inefficiencies or failures of employees. Such additional cost is represented by the difference between the operating costs of a going concern with a well ironed-out plant and system and a trained personnel, and the operating costs of a new plant and system.

3rd. As the sale of the product per unit of employee and dollar of investment will be less with a new plant as compared with one in operation for a period of years, the production and distribution expenses per thousand cubic feet of gas of a new plant will be greater, and the return upon the investment employed will be less than of a going concern.

[fol. 2364] The foregoing elements are included in what is known as the "going value" of a gas company.

Time Required to Reproduce the Existing Business as of June 1st, 1923

In reproducing the gas property used by the Consolidated Gas Company in its gas business to the extent that such business was secured on June 1st, 1923, the minimum time which I have considered necessary is five years; that is, it

will require at least this period of time to construct plant, mains, etc., and put them in operation and secure the business as of June 1st, 1923.

Items of Cost in Attaching the Business

As soon as a part of the plant and main system is completed and in readiness for operation, it is assumed that the new company will commence to set meters and install gas-consuming appliances.

Naturally, such preliminary work will have to be done prior to this time, such as canvassing, demonstrating, storage and display, accounting, experimenting, etc.

It is estimated that during the first year of actual operation of the property, there will be installed 50 per cent of all the meters and gas-consuming appliances in use by the consumers of the Consolidated Gas Company as of June 1st, 1923, and that it will require an additional two years to complete this work.

It is assumed that the prospective consumers have already been users of gas, and are, therefore, educated in its use and will eventually use an amount equal to what was used by them on June 1st, 1923.

It is proper to consider the cost of advertising, canvassing, commissions, accounting and financing, in securing the business, together with the actual cost of setting meters and gas-consuming appliances, including such materials as have not been included in the appraisal of the property in evidence. The cost of setting meters and installing gas-consuming appliances will include measuring for connections, getting out material, cartage, handling labor, and the general overhead applicable to this work, such as storage facilities, superintendents, clerks, liability insurance, vacation and sickness and instruction of employees in the performance of this work.

[fol. 2365] During the year 1923, the actual average cost to the Consolidated Gas Company for setting meters and installing appliances (exclusive of advertising, canvassing, commissions, etc.) was

For meters	$4.13 each
For appliances	$5.00 each

As the number of gas-consuming appliances in use is approximately twice the number of meters on the district, a conservative cost of installation of meters and appliances is in excess of $14.00 per meter, with the present trained efficient personnel.

The cost of canvassing, accounting, demonstrating, display and storage, experimentation, advertising, financing and miscellaneous in securing customers for gas-consuming appliances and promoting the use of gas, based upon the experience of the Consolidated Gas Company, is estimated at $6.00 per appliance, and as the number of gas appliances in use is approximately twice the number of meters on the district, I estimate that such cost as of June 1st, 1923, is not less than $12.00 per active meter.

Operations of the New Company

A new company would not, of course, be able to develop an annual sale of gas during the first year of its operation to the same extent that the Consolidated Gas Company was selling gas as of June 1st, 1923. As above indicated, it would take the new company at least three years to develop its gas sales to the point where the gas sales of the Consolidated Gas Company had actually been developed on June 1st, 1923.

I have therefore made a study and estimate of the prospective sale of gas by a new gas company during the first three years of its existence, in order to attain at the end of that period, the sales of the Consolidated Gas Company as of June 1st, 1923, as follows:

[fol. 2366] Operations of New Company

	Cu. ft.
During 1st yr. the new company will set 274,127 meters, representing for a full year's operations an average use of 137,063 meters, consuming 43,700 cu. ft. of gas per meter (the average sales of Consolidated Gas Company per active meter during 1923)	5,989,653,100

	Cu. ft.	Cu. ft.
During 2nd yr. 274,127 meters set 1st yr. at 43,700 cu. ft. per meter	11,979,349,900	
137,064 meters set during year representing for a full year's operations an average use of 68,532 meters consuming 43,700 cu. ft. per meter	2,994,848,400	14,974,198,300
During 3rd yr. 411,191 meters set previous 2 yrs. at 43,700 cu. ft. per meter	7,969,046,700	
137,063 meters set during yr. representing for a full year's operation an average use of 68,532 meters consuming 43,700 cu. ft. per meter	2,994,848,400	20,963,895,100
During 4th yr. 548,254 meters previously set at 43,700 cu. ft. per meter		23,958,699,800
Total sales for the Four Years of		65,886,446,300

as compared with 24,000,000 M. cu. ft. per annum, or a total of 96,000,000 M. cu. ft. sold by the old company.

We will assume that the price of gas per M. cubic feet to be charged by the new company is the same as that being charged by the old company.

It therefore follows that, as the operating costs, plus the costs of reproducing the business, are in excess of those of the present company, to that extent the new company will not show as favorable return upon its investment.

[fol. 2367] The additional costs attributable to connecting the business are, in my judgment, calculable as follows:

Connecting 548,254 meters at $4.13 per meter	$2,264,289
Connecting approximately 1,096,508 appliances at $5.00 per appliance	5,482,540

Canvassing, accounting, demonstrating, storage and display, experimentation, advertising etc., in securing this business at $12.00 per active meter, for 548,254 meters	6,579,048
Total	$14,325,877

The additional costs attributable to the new plant and personnel, are, in my judgment and according to my experience, calculable as follows: The actual and reasonable net operating costs of the Consolidated Gas Company, excluding all inter-company charges and after giving effect to miscellaneous operating revenues, during the year 1923, was at least 84 cents per M. cu. ft.

	Per M. c. f.
1st yr. Increase of 15% over per M. c. f. 84c.— 12.6c x 5,989,653,100	$754,696
2nd yr. Increase of 10% over per M. c. f. 84c.— 8.4c. x 14,974,198,300	1,257,833
3rd yr. Increase of 5% over per M. c. f. 84c.— 4.2c. x 20,963,895,100	880,484
4th yr. No Loss	
Total	$2,893,013

We then find that the additional cost due to the operation of a new company is over the cost of operating the established company $17,218,890, to which must be added an additional cost in that the investment per M. cubic feet of gas sold is higher for the time being in the case of the new company.

Investment of Old Company

Reproduction Value as of June 1st, 1923	$181,530,495
Working Capital as of June 1st, 1923	9,622,530
	191,153,025
Going value (as hereinafter shown)	27,475,903
Total value	$218,628,928

[fol. 2368] New Company—Capital Expenditures

During a two-yr. period of construction it is estimated that the expenditures in plant and working capital will amount to 50% of the Reproduction Value (including Working Capital) of the old company and the new company will begin its operation and delivery of gas to its consumers at the expiration of such period	$95,576,513
During the 1st yr. of actual operations the new company will expend an additional amount for plant and property extensions of approximately 25% of the Reproduction Value of the old company	47,788,256
During the 2nd yr. of actual operation the new company will expend for plant and property extension an additional amount equal to 25% of the Reproduction Value of the old company	47,788,256
This amount of money expended during these four years will approximate the Reproduction Value of the Consolidated Gas Company as of June 1, 1923, exclusive of Going Value	$191,153,025

New Company—Operations, First Year

Investment at Commencement of Operation after a two-yr. period of construction	95,576,513
Sales during First Year	5,989,653,100 cu. ft.
Cost of setting 274,127 meters at 4.13 per meter	1,132,145
Cost of installing 548,254 appliances at $5.00 per appliance	2,741,270
Cost of canvassing, advertising, etc., in obtaining this business, calculated at $12.00 per meter	3,289,524
Additional cost as a result of New Plant and Personel	754,696

Additional cost due to a lesser quantity of gas sold per dollar of investement:		
	Per M c. f. on annual sales	
8% Int. on Investment of old company	$ 6356	
8% Int. on Investment of new company	1 2766	
5,989,653,100 cu. ft	6410	3,839,368
Additional Cost during 1st yr. of Operation		$11,757,003
[fol. 2369] Increase Cost due to lesser sales per dollar of Investment $.6410 per M. cu. ft. of Annual Sales—5,989,653,100 cu ft. at $.6410 per M. cu. ft.		$3,839,368

New Company—Operations, Second Year

Investment at Commencement of Operation	95,576,513
Plant & Property Extensions during 1st yr. of operation	47,788,256
Investment in Plant & Property at beginning of 2nd yr. of operation	143,364,769
Additional Cost during 1st yr. of Operation	11,757,003
Total Investment Commencement 2nd Yr.	155,121,772
Sales during 2nd Yr. 14,974,198,300 cu. ft.	
Cost of setting 137,064 meters at $4.13 per meter	566,074
Cost of installing 274,127 appliances at $5.00 per appliance	1,370,635
Cost of canvassing, advertising, etc; in obtaining this business, calculated at $12.00 per meter	1,644,768
Additional Cost as result of new plant and personel	1,257,833

Additional Cost due to lesser quantity of Gas Sold per Dollar of investment:		
	Per M c. f. on annual sales	
8% Int. on Investment—Old Co.	$ 6356	
8% Int. on Investment—commencement 2nd yr. New Company	.8287	
14,974,198,300 cu. ft	1931	
		2,891,518
Additional Cost during Second Year of Operation		7,730,828

[fol. 2370] New Company—Operations, Third Year

Investment at Commencement of Second of Operations	155,121,772
Plant & Property Extensions during 2nd yr. of operation	47,788,256
Investment in Plant & Property at beginning of Third Year of Operation	202,910,028
Additional Cost during 2nd yr. of Operation	7,730,828
Total Investment Commencement Third Year	210,640,856

Sales during Third Year 20,963,895,100 cu. ft.	
Cost of setting 137,063 Meters at $4.13 per meter	566,070
Cost of installing 274,127 appliances at $5.00 per appliance	1,370,635
Cost of canvassing, advertising, etc., in obtaining this business, calculated at $12.00 per meter	1,644,756
Additional Cost as result of New Plant and Personnel	880,484

	Per M c. f. on annual sales	
Additional cost due to lesser quantity of Gas sold per dollar of investment:		
8% Int. on Investment—Old Co.	$ 6356	
8% Int. on Investment—Commencement 3rd yr. New Co.	8038	
20,963,895,100 cu. ft. at	1682	
		3,526,127
Additional Cost during Third Year of Operation		$7,988,072

New Company—Operations, Fourth Year

Investment at Commencement of Third Year of Operation	$210,640,856
Additional Cost during 3rd yr. of Operation	7,988,072
Total Investment Commencement of 4th Year	218,628,928
Investment in Old Company, exclusive of Going Value	191,153,025
Going Value of Old Company as of June 1, 1923	27,475,903

[fol. 2371] I am therefore, of the opinion that the going value of the Consolidated Gas Company in its gas business as of June 1, 1923, and the present time, is at least $27,475,903.

If, however, the additional cost of capital due to the lesser quantity of gas sold per dollar of investment were calculated upon the basis of the actual investment in the property devoted to the use of the consumers of the Consolidated Gas Company, as shown by the books of account and exhibits in evidence, amounting to a- least $93,896,-012, instead of upon the amount of the present value of the property (excluding going value) of $191,153,025—then the amount of such going value would, in my opinion, be at least $23,124,708.

The following summary shows the going value of the Consolidated Gas Company as of June 1st, 1923, on the basis of

1st. Reproduction value of physical property as found by Colonel Alten S. Miller, in evidence—

2nd. Investment in such property as shown by the books of accounts and exhibits in evidence:

	Basis of reproduction value	Basis of investment as found in company's books
Cost of setting meters	$2,264,289	$2,264,289
Cost of installing appliances	5,482,540	5,482,540
Cost of canvassing, advertising, etc., etc.	6,579,048	6,579,048
Additional cost as result of new plant and personnel	2,893,013	2,893,013
Additional cost due to lesser quantity of gas sold per dollar of investment	10,257,013	5,905,818
Going value not less than	$27,475,903	$23,124,708

[fol. 2372] ALTEN S. MILLER, a witness in behalf of the plaintiff, resumed the stand.

Cross-examination by Mr. Donnelly:

My estimate of $19,188,890 for going value represents my opinion of the elements of value in the properties used by the Consolidated Gas Company in serving its consumers as an assembled plant and an established plant and system, the entire property doing business as a going concern. I reached that figure by multiplying the number of consumers Consolidated Gas Company had on June 1, 1923 by $35.00. In making up my estimates of going value I assumed, that the construction of the manufacturing plants, the installation of the manufacturing equipment, and the mains of the distribution system had been completed. As to the miles of mains which I assumed had been completed, I have in mind the mileage owned by the company and testified to by Mr. Simpson and the same mains. It does not follow that I had knowledge of the number of consumers the company would be ready to serve. I assumed all the conditions [fol. 2373] as the existed June 1, 1923; all of the present

conditions, including the existing business. This estimate of mine is what it would cost to reproduce that business existing as of that date. I assumed the number of services existing and condition as it actually existed as of that date, including population, building's character and the location of the manufacturing plants and distribution system. I don't know that I have included all the elements which in my opinion constitute going value. The carrying charges of course during the period of putting on the business are a very material part of the going value. I am not able to segregate my estimate so as to assign to each one of the individual items which make it up what part of my figure of $19,188,890 is therein included. By greater expenditures in commissions, canvassing and in special concessions I can build up the business faster and reduce the carrying charges while I am building it up; by lesser concessions it takes longer and the carrying charges are increased and the costs would not be the same in any two cases. I made many at-[fol. 2374] tempts to segregate, but I found it very difficult. So difficult that it is meaningless, as far as I am concerned, after it is done. In speaking of minor changes in the physical property to make it efficient in operation, I mean the entire physical property of the company, plants and distributing system which includes the plant equipment, machinery, mains and services and appliances. It would require the substitution of appliances, because the people would not always be satisfied with the first appliance they got and we would have to take it out and substitute another one under these conditions. I do not know of any minor changes that would have to be made in that property as it existed to make it efficient in operation, but if it were built new it would not be built exactly, and minor changes would be necessary in order to put it in the condition in which it was June 1st. There would be modifications in new windows, doors and buildings; the changing of trackage from one place to another, and coal handling; changes of connections in some cases, where they might be too small or in the way of something else; changes of method, perhaps, in a minor degree, of the coal handling; the moving of pumps or engines which happen to be in the way of the transportation of materials and the merit of such changes, which are really going on all the time anyhow. In testifying on direct examination concerning the cost of organizing personnel, "that is, starting with a new and uncoordinated

staff and making an efficient coordinated staff that, of course, including all employes of the company. This expense is shown not only in the increase in labor during the earlier period of operation, but also to the increase in cost of materials used and to some extent to the damage to the property while the new men were learning the business thoroughly and learning to operate it efficiently," I mean [fol. 2375] both the employees engaged in manufacture, and those who do the canvassing in connection with the appliances and meters. By the "earlier period of operation" I mean during the period not less than three years of building up the business. I did not assume that all these manufacturing plants would start operation simultaneously; probably they would not. When they first started they would not have any customers. The company would not have any consumers till after the gas is made and on the line. I assumed it would start without services. I assumed that the services would be put in just as fast as the greatest amount of canvassing, advertising and expenditure with the necessary concessions would persuade the consumers to come on the line. The canvassers and solicitors for business would start before the distribution system was completed—that is as to services and meters. As to the num- [fol. 2376] ber of employees with which the manufacturing plant or plants would start operations I have assumed no specific number would be skilled laborers. Scarcely any of them would be skilled, because they would have to be taught, and that is part of the expense of operation.

In almost all gas plants the labor is divided, broadly, into two classes, skilled and unskilled. The so-called skilled laborer would perform such work as they ordinarily perform at this time; the same class that they are now performing. Even some of the special coal handlers are skilled*d* laborers; the gas makers, the boiler firemen, the carpenters, the blacksmiths, the structural iron workers if they happen to have any—sometimes they carry them and sometimes they do not—and some of the firecleaners are skilled, some of the purifier box handlers are skilled, the locomotive fireman and engineer are skilled; the engineers in the engine room and power plant are skilled, and a very large number are skilled; and the ordinary shoveler, the [fol. 2377] ordinary coal shoveler, is not skilled as a rule,

and the ash handler is not skilled as a rule. That I think generally covers them. There may be a great many more skilled laborers here. In the repair shop a good many repair men are skilled. Even the helpers to those special men are more or less skilled. As to how long it would take for them to become sufficiently familiar with their duties to perform their work efficiently, depends on the man. Some of them do it very quickly, within a few weeks, and sometimes you have to change them three or four times. Some of the men you hire and put on the job would not ever learn, and even in continuous operation of plants there is a labor turnover, and this labor turnover during the earlier years would be very high.

At the starting of this gas enterprise, practically none of the laborers would be familiar with the duties they were called on to perform. They would all have to be trained and all of them would require a certain amount of training in the performance of the duties involved in regard to gas making. A good carpenter could adapt himself. Some would never accustom themselves and it is a question of turnover till you place some who can.

I assumed the property would be damaged by all classes of labor not familiar with the work. They plug up gas pipes, break gauges, drop stuff on pipes, break cotter bars, and there are all sorts of minor damages, breaking bolts—minor damages of all kinds. The damage would be done by both skilled and unskilled labor. The damage varies in every new plant; it would run into many hundreds of thousands of dollars in all these properties. The burnt out bearings and the broken connecting rods and all sort of accidents in the early days would run into hundreds of thousands of dollars in a property of this size. That figure is based upon actual experience at Ravenswood, Baltimore, Hyattsvil-e and Omaha. I did not say it ran into the hundred of thousands at Ravenswood. All of these gas properties with which I am familiar had damages by skilled and unskilled labor to the company's property after the company began operations. It did not run into hundreds of thousands; but they were all damaged in starting up. As to the extent they [fol. 2378] were damaged in starting up I would say practically pro rata. Hundreds of thousands on the whole Consolidated property. As to the actual experience of the Con-

solidated after it started in to manufacture and distribute gas, they had a good deal of damage at Astoria and a great many changes of various kinds were made at Astoria after the plant was first built. I could not say offhand what was the damage due to the carelessness of labor, skilled or unskilled. They carried to Astoria a great many skilled men who had been trained in the other plants, so that naturally they would have less there than if we organized and started this new; but even so, for one thing, I remember blast pipe being blown up by the carelessness of a gas maker. That is the only thing I recollect at the moment. They had to shut down the plant, wasted a lot of fuel and oil, and caused many hundreds of dollars for repairs. I do not know how much it was. That was a year or two ago.

By "Expense incurred because of the increase cost of materials used," I mean that during the earlier period of operation more boiler fuel, generator fuel, oil, than necessary after the plant is efficiently operated were used, but not more than necessary to teach the men. That condition would exist until you had a well trained force which depends on how long it takes to build up your business and get a well trained force. There is no definite period, because if you start your plant at one fourth capacity and do not get up to full capacity for three years, then it will be four years. If you start your plant at full capacity, you could probably train your men in a year or 18 months. I do not find that more materials are used in the manufacture of gas than are necessary in plants established for a long period of time. I do find that among the various gas [fol. 2379] plants operating in the City of New York there is a variance in the quantity of materials used in manufacture but that is not due to inefficiency of operation on the men. It is due to a variation in the conditions of the plant or a variation in the quality of the material or the equipment. The personal equation of the operators probably has something to do with it in a minor degree.

It is fair to assume, that before the company was ready to start the manufacturing operations it would want to begin in the place where the demand for gas was heaviest, and in that connection it would install its mains in that section. Its mains would be installed during the construction of the manufacturing plant; the services and meters after they

had begun manufacturing I assumed that some of the canvassing for gas business would be done before the company had installed services and meters, and some of it before all the mains were installed; but none before any mains were installed. I don't know how much of my estimate is included in canvassing done under those conditions. I am familiar with the territory served by the Consolidated Gas Company. Its boundaries are Manhattan Island. I do not know if the Consolidated Gas Company supplies consumers in the Borough of the Bronx. I think the section known as the Dyckman tract is the north end of Manhattan Island. I do not know its boundaries. I do not know specifically but it may be true that building activity, such as apartments and stores has been pretty constant in that section for at least the past five years. I have never made any study of that. I do not know where the Marble Hill section of Manhattan Island is and therefore I could not tell anything as to the comparative density of population there. The northern end of the island is the only part of [fol. 2380] plaintiff's territory I know of which is compar-tively sparsely settled. For example below 14th Street, speaking comparatively from a gas point of view, there are not so many gas consumers and that is true to a considerable extent; to quite a considerable extent. There are numerous dwellings but the occupants of those dwellings use gas but to a very limited extent. I did not make any inquiry or investigation on that subject to ascertain the extent to which the gas is used. I just listened to comments on the situation that did not affect my figures in any way. I don't know to what extent gas is used on what is popularly known as the lower east side of Manhattan Island, below 14th Street, by people who live there. However, it does not affect my figures in any way.

As to the staff I assumed would be employed in getting business for the plaintiff, I should say whatever might be necessary. Whatever salary would be necessary to get them, would be paid to each member of that staff. I made no assumption as to salaries specifically. This estimate is merely based on my experience adjusted for difference in costs. I do not know how much of my estimate for going value is attributable to salaries paid to employees in getting gas business. I did not assume that all of the company's

consumers would be secured as the result of the efforts made by the company's solicitors and canvassers. I based my assumption on practice. When you start into a new territory, to develop, you will find that from one-third to one-half the people immediately will take service in a minor degree; that is, they will put in a range; but that range they will use only during the summer months, and they will not put in a water heater. Now, they do not put in the water heater until either the company buys their old coal range [fol. 2381] from them, or else until that old coal range wears out. They they put in a water heater and then they use service during the twelve months. So that while you might immediately get a good many customers for a small amount of service, unless you are very active in soliciting and offering special advantages, you won't have full service such as the company ordinarily enjoys. Some of the company's business would be obtained by co-operation between advertising and canvassing. They would advertise the advantages of gas; request to be informed of the interested party's address, so as to give the company an opportunity to send a canvasser. They would advertise ranges, heaters, water heaters, and gas for industrial purposes, and just keep the people informed as far as possible about the facilities for using the gas. That is—advertising would be done in the newspapers and circulars. Circulars might be mailed or delivered by hand to prospective consumers whichever was considered the cheapest at the moment. My estimate of going value is not subdivided to show the amount attributable to advertising. That advertising has to be watched all the time and co-ordinated with advertising and would probably vary from month to month. I am aware that some of the gas companies operating in the City of New York advertise the use of gas on the gas bills which they send to their consumers. I believe that new business has come to the gas companies advertising in such a way. I have known it to happen in the City of New York that when a new section is opened up, such as the Dyckman tract, for instance, and dwellings and stores have been erected where none existed before, that the occupants of those dwellings and stores have petitioned for gas service of their own volition and thus secured it. But they take gas only in a moderate degree. They do not, as a rule, com-

pletely outfit themselves. My estimate for going value is [fol. 2382] based upon the reproduction value of the existing business and that assumes a new concern as of the 1st of June, or what it would cost to reproduce the business on a new concern. It would assume that the customers had other means of lighting and heating, such as electricity, oil, coal. Electricity for illuminating purpose*d* in the City of New York was being used in 1885, when I first visited New York. I do not know how much before that. As to which is the cheaper for cooking and domestic purpose*d* electricity or gas, it depends on the method of use and the relative price of the two. It depends upon where you are and what the conditions are under which you guarantee its use, what your load factor is, and how much you are going to consume. There are too many factors. I could not give that offhand. If you use fireless cookers, I think probably electricity would be cheaper. Under ordinary conditions, as the customer uses it, under average prices, I would say gas is somewhat cheaper. One is equal to the other. There are some instances in which electricity will conceivably be cheaper for cooking and domestic purposes than gas, for instance, I think in a coffee percolator it is a little cheaper than it would be to set a percolator on top of the stove; and under certain conditions of oven cooking, where you use it in connection with a fireless cooker, I think it is conceivable electricity might be cheaper even though you compare electricity at about eight cents a kilowat hour with gas at $1.15 or $1.20. I think electricity might be cheaper under those conditions. Some of this expense which I have assumed for educating the people in the use of gas has been due on my assumption, to the persuasion that the canvassers or solicitors would find it necessary to exercise in order to get [fol. 2383] people who had been using electricity to change to gas in part. I do not agree with the statement, that it may be called a law of nature that people will buy cheapest what will serve their purpose best. If they cannot buy cheapest, they will very often buy what serves the purpose best even though they pay more for it. Since electricity was used for illuminating purposes in the City of New York, the use of gas for illuminating purposes has declined and its use for domestic and commercial purposes, such as cooking and heating, has increased; this whole present business practi-

cally has been built up in the last thirty or forty years; in other words, it is a heating proposition and not a lighting.

Gas appliances are sold not only — the other gas companies but by *by* manufacturers or their agents, by plumbers, and by department stores. The consumption of gas in this city has been increased by the sales of gas appliances by concerns and individuals other than gas companies. Every appliance increases consumption regardless of who sells it. I have not made any inquiry of the numbers of gas appliances sold or rented during any given period by the Consolidated Gas Company on the personal request of its own consumers. I have not made any inquiry of the number of gas appliances sold or rented during any given period by employees of the Consolidated Gas Company. On June 1, 1923, the Consolidated Gas Company had 548,254 active gas meters. I don't know how many on June 1st, 1922.

I do not know how many new meters were installed between June 1, 1922, and June 1, 1923, for any purpose from any cause whatsoever. I would make the same answer if you directed your inquiry to gas appliances.

I know that the Consolidated Gas Company publishes and circulates a magazine known as Gas Logic, and the [fol. 2384] purpose of that magazine is to increase the sales of gas. I do not know what the circulation of Gas Logic was on June 1, 1923, and or how it reaches its readers. I did not make any inquiry or examination for the purpose of ascertaining the cost for any given period of printing and circulating Gas Logic. The Consolidated Gas Company are the publishers of Gas Logic. The copy of Gas Logic, Volume XXXV, June 24th, No. 6 is the magazine that I have been talking about and referring to as Gas Logic. On page 8 of that Gas Logic, on the left hand side, it states that Gas Logic is a magazine published by the Consolidated Gas Company for distribution among consumers of gas. It is illustrated with numerous photogravures showing the various uses of gas for cooking and other domestic purposes, and on page 12, at the top of the page, it bears the statement that Robert K. Livingston is the publisher, following the Company's name. I do not know what salary Mr. Livingston receives as the publisher of Gas Logic. It is fair to assume, that some new gas business is secured as a result of the printing and circulation

of Gas Logic. I have seen the figures for the plaintiff company's promotion expense, but I do not remember at the moment what they are, but I did not learn when for the purpose of making up this estimate for going value. By promotion expense I understand you mean among other things, the expenses incurred for canvassing and soliciting and advertising for gas business. My estimate of going value was prepared after I had completed my appraisals No-. 856, 866, 868, 871, 873, 874. I could not say specifically how much of my estimates for going value is attributable to special concessions in order to build up the business. [fol. 2385] I do not think it is the practice of the Consolidated Gas Company, to make special concessions; I think the usual custom is to wait until the coal range burns out. In getting on the industrial load, if you are going to get it on in three years, you will have to make concessions in the industrial load and probably have to make some concessions in getting a special water heaters, etc., but the principal thing is to get rid of the coal or the oil range, as the case may be, or the electric range, if there would be such. The company's books would not show any sum or sums expended in making special concession of the character described, to get gas ranges substituted for coal ranges and the like; it would be an item of expense and would not show as to special concessions. My understanding is that they do not make special concessions but take their time and let the old plants wear out. In making up this estimate for going value I assumed those concessions would have to be made in the case of a very large number of the customers. It was upon the assumption that some persuasion at least would have to be exercised upon a given consumer to induce him to abandon the gas range, during the winter months. Many customers will put in a gas range, during the summer, but during the winter they heat by the coal range, so they only get a short use of the gas range. Then, when the coal range gives out and the householder is faced with the problem of buying a new coal range, then he will buy a gas range. Under normal conditions, a coal range will last ten or fifteen years.

I have assumed, for the sake of my computations, you would be able, by active canvassing, special concessions, etc., to get this business on in three years. The expenditures

incurred in adjusting the appliances I have included in my [fol. 2386] estimate for going value. It is not a fact that, when the Consolidated Gas Company adjusts its appliances of gas, the cost of the adjustment is included in the purchase or the rental of the appliance itself. As to expenditures which would be incurred in the adjustment of appliances, I do not know the exact amount but many of them might not require adjustment and many others would ans such expenditures might be necessary. I know that the company does regularly send out in response to complaints and sometimes, in the case of the change of the heating power has to adjust all of them, but in response to complaints they will adjust appliances. I did not examine the company's books for any given period to see what that expenditure was. I could not say exactly in dollars how much of my estimate for going value is attributable to the cost of teaching people to use the appliances efficiently. There is quite a little expense necessary in that connection in the case of new customers, to keep them from burning gas so inefficiently as to become dissatisfied with the service. I testified on this subject of going value in the pending Brooklyn Union Gas Company case, and in that case my estimate was $35 per meter for the Brooklyn Union Gas Company. In giving my testimony, I assumed all of the conditions existing in Brooklyn as they were on June 1, 1923, with the exception I assumed that there would be an absence of gas and in making up my estimate for going value in the Brooklyn Union Gas Company case, I did not assume that the company was a new suburban territory. I was asked this question and made this answer:

"Q. People were educated to the use of gas to the same extent that they are?"

"A. To the same extent that the average new territory [fol. 2387] is educated. The average new suburban territory is made up largely of city dwellers."

I do not know of any part of the territory of the Consolidated Gas Company as of June 1, 1923 which I would describe as average new suburban territory. In the Brooklyn Gas Company case I testified I did not know of any community of the size of Brooklyn as already existing on June 1, 1923 that had no gas plants; and I will testify the same about New York.

My estimate for working capital of $6,500,000 contained in Plaintiff's Exhibit No. 856, is 40 cents per thousand cubic feet on the gas made and sold by the company and 20 cents on the gas bought and sold by the company.

On Plaintiff's Exhibit No. 864, my estimate for working capital is 20 cents per M cubic feet of gas sold by the Consolidated Gas Company and 20 cents additional for that part of the sales which the Consolidated Gas Company manufactured itself. Referring to my estimate for the Consolidated Gas Company contained in Plaintiff's Exhibit No. 856, I consulted Mr. Davidson and Mr. Nickerson, to ascertain the average amount of coal the plaintiff had on hand during 1922 and 1923 and I determined the exact amount. I also examined the manufacturing reports and records but not the books of accounts, showing the materials and supplies on hand and the analysis of the material and supply account. The monthly book form reports were analyzed for me by Mr. Nickerson or Mr. Davidson, so as to show the exact amount of coal included. The average amount of coal on hand during 1923 at Astoria was $1,853,500. I have not the amount in tons. I do not think I have 1922. I cannot put my hand at the moment on the Consolidated Gas Company's average amount of coal, [fol. 2388] but it was somewhere in the neighborhood of $500,000; for 1923 the coal runs around $10.00 a ton. In my opinion the average amount of coal which the company should have had in 1923 was exactly what it had. I examined the company's operating conditions and made up my mind that the figures given to — by Messrs. Nickerson and Davidson represented what they should have had on hand during those periods and that applies only to the year 1923. I looked to see how much gas it made and how much coal they used and what the conditions of the labor market were of that date, and satisfied myself that the management of this company used good judgment in carrying its stock of materials. In my opinion the company should have had on hand in reserve during 1922 and 1923 a five or six months supply. The Consolidated Gas Company without Astoria would not carry five or six months' supply. The labor conditions were bad and there was a strike one year, and they carried all they could. I do not know just what their capacity is for storage in New York.

They use the coal of the Astoria plant and therefore to that extent have the advantage of the Astoria stock. I do not know the coal storage capacity of the Consolidated Gas Company.

The average amount of oil on hand in 1923 at Astoria was $281,000 and the Consolidated Gas Company was somewhere around $165,000 or $170,000. The average price in 1923 was 5.5155, and divide that into the dollars and you get the quantities. In my opinion the average amount of oil the Consolidated Gas Company should have had on ha-d during 1922 and 1923 was what they actually had. I could not tell you offhand what the oil storage capacity of the Consolidated Gas Company is. It is in the record. The average amount of coal on hand and in reserve and the average amount of oil on hand and in reserve are elements which you took into consideration to some extent in making up my estimate of working capital, I conceived the work-[fol. 2389] ing capital somewhat below those, to make it a minimum. I think the working capital should be more than they have. In 1923, the company probably would have had more coal if it could have got it. I do not think they had enough on hand in 1922 on account of market conditions and the strike conditions. I have the Consolidated Gas Company's capacities of the coal storage and oil storage plants. The boiler fuel is included in the total amount of fuel. I do not think I used boiler fuel in my statement of materials to be in storage. I said, coal in storage, which included generator coal and boiler coal and generator coke and I did not separate the amount of coal reported used in the generators and under the boilers and that was included in my estimate of working capital. Everything the company has over and above its daily requirements is a reserve. The boiler fuel storage capacity of the Consolidated Gas Company is not specifically separated from its generator fuel.

As to fuel, I did not have tar included in that and in the same fuel that is used in the generators that is in part used under the boilers—the same fuel exactly, so that we can not separate the generator fuel from the boiler fuel, because the same pile furnished both, to a certain extent. They keep a separation on the books after it is used but not before it is used. They buy some boiler fuel which is shown

on the books as such and then they have anthracite coal and coke to some extent for the boilers and to some extent for the generators. The company keeps account of the amount of fuel on hand and I have given it to you. The amount of boiler fuel on hand in 1923 is included in fuel of all kinds.

I did not make any investigation or inquiry to ascertain how much pipe the company carried for mains and services in 1922 and 1923. I did make an assumption as to the amount of pipe carried for mains and services in 1922 and [fol. 2390] 1923 by the Consolidated Gas Company in connection with its stationary and other general supplies—repair and other supplies but I have not the quantities of pipe or the diameter of the pipe it had on hand in 1922 and 1923. In making up my estimate of working capital I did not form an opinion as to the amount of pipe the company should have had on hand during 1922 and 1923. I ascertained the season of the year the company purchases its pipe from the original contracts for the purchase, and discussion with the purchasing agent, who showed me the original contracts. They place their orders in December, as a rule, and take delivery during the coming year. Deliveries are made of the purchases made in December whenever the pipe is required. Generally they have to take some supplies during the winter, while they are not using it, in order to get the low prices they get in December, but generally it is a matter of dicker between the company and the seller as to whether they can get the pipe just as required or whether they have to take some part of it during the winter months. My recollection is that the foundries have the privilege of delivering some during the winter months at their option, otherwise, the pipe deliveries are as specified by the company. I do not know upon what terms of credit the company purchased its oil, coal, boiler, fuel, coke or its pipe. In making up my estimate of working capital I gave no consideration to the terms of credit extended to the company in its purchases of material. I did not know anything about the terms of credit. The company should have enough working capital to permit it to get all its discounts. They have a cash discount on gas meters, steel pipe, various fittings, valve and special kinds of apparatus that usually [fol. 2391] carry a cash discount. Spot cash is not required, for a cash discount. I do not suppose they would pay any

earlier than necessary. I have no 1922 figures here at all. In my estimate for working capital I assumed the company was purchasing its gas oil during the year 1923 at five and a half cents. The company used something over 36,264,892 gallons during that year. They used two kinds of fuel in the generators. There was a little less than 105,000 tons of anthracite coal at $10,664 and a little under 39,300 tons of coke at $9,966. For boiler fuel they used 16,828.72 tons of coal at $10,650; 10,455.52 tons of coke at $6,334 and 5,568,027 gallons of tar oil at $.046. I do not know how much pipe is.

I determined the amounts of the company's weekly and monthly payrolls during 1923 exactly insofar as operations went, from the report made up by the company's auditor. I made no special inquiries as to the weekly and monthly payroll amounts during the year; I took the total cost of manufacturing gas, of making and selling gas during the year. The weekly and monthly payrolls are not subdivided. They have labor and material subdivided by months and by the year. I was particularly interested in the year 1923; I had the entire years' operations before me. The aggregate of the weekly and monthly payrolls for 1923 is not segregated alone in the statement. This is purely operations and the weekly and monthly payrolls would carry constructions in addition to operation. I made no inquiry to ascertain the amount of consumers deposits on December 31st, 1923 and on December 31, 1922, I did take that element into consideration in making up my estimate of working capital. The [fol. 2392] company must earn interest on the consumers deposits, and the only way that it can earn interest on the consumers deposits is by taking them as part of the company's capital. That is invested in the property in order to earn interest to be paid as interest on consumers deposits. The average cash the Consolidated Gas Company had on hand or in the banks during 1923 was $2,378,100.90. That figure was given to me by Mr. Nickerson, the statistician of the company. It agrees with the figure as an exhibit in the case.

There are no specific amounts in my estimate for working capital for plant extensions and additions by the Consolidated Gas Company during 1923. My estimate of working capital only includes such an amount as would be applied to minor construction. I am familiar with the construction

work that has been going on at the Consolidated plants during 1923. You must have these figures in connection with the whole. It might be enormous for some companies but it is small for the Consolidated. Some part of my estimate for working capital may cover an expenditure for that new construction during 1923. I have an entire allowance for materials and supplies for the Consolidated Company, outside of gas making materials, of only $500,000. Now, a large part of that represents stationery and repair parts, and some part of that might have been used. I have made up a study of working capital which amounts to $485,000 more than mine, and then I dropped to mine. So that you might say I took out those construction materials. They may or may not have been taken out; but there is a very small amount which would cover any construction materials. It would apply only to minor construction.

[fol. 2393] Further direct examination by Mr. Ransom:

I have prepared a statement showing the additions to and withdrawals from the property of the Astoria Light, Heat & Power Company, from June 1st, 1923 to December 31, 1923, on the basis of showing the additions at the book cost to the company. The withdrawals are taken out in this statement at the figures in which they appeared in my reproduction cost inventory as of June 1, 1923. Referring to this particular exhibit in respect of additions, I have first shown a summary sheet with respect to the Astoria Light, Heat & Power Company of additions from June 1, 1923 to December 31, 1923 arranged by general accounts which includes plant, general equipment, furniture and fixtures, tools and implements. I have computed on this summary sheet the percentage of these additions which is applicable and devoted to uses of the Consolidated Gas Company on the basis of the same percentage that I have hitherto testified and derived from the Woods report. On the subsequent sheets in respect of additions, I have shown details for example, additions to plant, as shown by the books of the company and I have a sheet called a reconciliation of additions.

I have found that there were some items of the property of the Astoria Company which represented construction

work which had been done as of June 1, 1923, or theretofore, and were therefore included in my inventory and appraisal as of that date, but of which the payments by the company were not included in the books and shown in the books until after June 1, 1923. On this sheet called reconciliation of additions I have shown the various addition- to plant, fur- [fol. 2394] niture and fixtures, tools and implements and general equipment, as I have given them in the previous sheets of this proposed exhibit, and I have also shown the details of items which are included in my appraisal as of June 1, 1923, but for which the expenditures by the company appear in the books subsequent to that date. I have shown the withdrawals from June 1, 1923 to December 31, 1923 at the Astoria property and computed with the same percentage the portion of the withdrawn property which was devoted to the uses of the Consolidated Gas Company of New York. This exhibit is true and correct on that basis. The withdrawn items are withdrawn at the figures at which the same items appear in my inventory and appraisal as of June 1, 1923. If additions were made in November or December of 1923 which were not paid for by the company during November or December 1923 or up to December 31, 1923, such additions would not appear in this exhibit 886. With respect to additions, it is a statement of additions made and paid for. With respect to the Consolidated Gas Company of New York I have similarly prepared a statement of additions and withdrawals from June 1, to December 31, 1923, on the basis of the additions at book cost and according to the books and on the basis of withdrawals made after the figures shown in my inventory and appraisal, with the exception that in withdrawing the 42nd Street I have left in the unamortized balance in that statement. On page 16, of this proposed exhibit I have shown the entire value of property withdrawn at the 14th and the 42nd Street stations, based on Mr. Robert Huntley's appraisal of the land included in those stations, and I have shown the total sum in this withdrawal sheet at which those properties were included in my inventory and appraisal. The [fol. 2395] withdrawals here except with respect to that one are the withdrawals at the full figure at which these appear in my inventory and appraisal.

At pages 7949 and 7950 of the mimeographed record, as

to the reason for a difference in respect of the price at which certain scrubbers were shown on pages 69 and 54 of my inventory and appraisal of the Astoria plant, there was an error in computation made. That affected the figures shown by me as the value of the Astoria plant and property as of June 1, 1923. I have prepared such substitute sheets as are necessary in order to eradicate the effect of that error. I have prepared a corrected sheet of Plaintiff's Exhibit 866 in respect of the value of the property at the Astoria Light, Heat & Power Company as of June 1, 1923 and in that I have corrected the item of Manufacturing Plants and Holders; in other respects the basis of this sheet is the same as you have previously testified. I have recomputed my undistributed structural costs upon the basis of that changed figure in respect of Manufacturing Plants and Holders.

Similarly I corrected the sheet 2-A of Plaintiff's Exhibit 866-A which was the summary based on the use of Mr. Stevens' figures for land instead of Mr. Huntley's, and there I have corrected that figure in the same way as in Exhibit 866-X and have recomputed the undistributed structural costs accordingly. My previous testimony in respect of this sheet and the accompanying sheet applies to this summary. That same error in respect of those scrubbers affects page 1 of Plaintiff's Exhibit 868, which showed the property of the Astoria Company and the portion of it devoted to the use of other companies in connection with the Luyster Creek Coal Handling Property and also the value [fol. 2396] of Mains, Services, Meters and Gas Appliances, and I have prepared a corrected page 1 of Plaintiff's Exhibit 868.

Exhibit 868-X was based upon the use of Mr. Huntley's figures in respect of land and I have prepared a corrected page of Exhibit 869 similarly which is based upon Mr. Stevens' appraisal of the value of the Astoria land and I have made the same computatons on this as I did in 869, page 1 when it was originally offered. With reference to the final summary sheets, which were Exhibits 873 and 874 and which were set out physically in the mimeographed record, I have prepared a corrected Exhibit 873 which is based upon the appraisal of Mr. Robert Huntley in respect of the value of land, giving effect to that error.

PLAINTIFF'S EXHIBIT 873 (CORRECTED)

VALUE OF THE PROPERTY USED BY THE CONSOLIDATED GAS COMPANY OF NEW YORK IN ITS GAS BUSINESS AS OF JUNE 1ST, 1923

Property of affiliated gas companies used by the Consolidated Gas Company of New York:	
Astoria Light, Heat & Power Co.	$37,539,809 82
48" Harlem River Main	266,209 03
62nd Street Boiler and Governor House	121,413 67
48" and 60" Mains in Long Island City	839,208 32
Astoria and Ravenswood Tunnels	8,742,186 64
	$47,508,827 48
Property of Consolidated Gas Company of New York used by affiliated companies:	
48" Transfer Main	669,525 03
48" Connecting Main	894,969 64
36" Distributing Mains	920,167 00
10,000,000 cu. ft. Holder and Accessories at Kingsbridge	1,159,704 50
Small Mains in Bronx	145,687 00
	3,790,053 17
	43,718,774 31
Value of the Property of the Consolidated Gas Co. used in its Gas Business as of June 1st, 1923	147,434,251 00
The appraisal of land by Mr. Robert Huntley was used in the above values	$191,153,025 31

[fol. 2397] I prepared also an Exhibit 874 corrected, which also was a summary sheet and in that I gave effect to the correction of this error with respect to the scrubbers on page 54 of my Astoria appraisal. In this I have used the

figures testified here by Mr. Stevens in respect of the land concerning which he did not testify on Mr. Huntley's figures.

PLAINTIFF'S EXHIBIT 874 (CORRECTED)

VALUE OF THE PROPERTY USED BY THE CONSOLIDATED GAS COMPANY OF NEW YORK IN ITS GAS BUSINESS AS OF JUNE 1ST, 1923

Property of affiliated gas companies used by the Consolidated Gas Company of New York:		
Astoria Light, Heat & Power Company	$36,651,706.04	
48" Harlem Riven Main	266,209.03	
62nd Street Boiler and Governor House	121,413.67	
48" and 60" Mains in Long Island City	839,208.32	
Astoria and Ravenswood Tunnels	8,730,393.96	
		$46,608,931.02
Property of the Consolidated Gas Company of New York used by affiliated companies:		
48" Transfer Main	669,525.03	
48" Connecting Main	894,969.64	
36" Distributing Main	920,167.00	
10,000,000 cu. ft. Holder and Accessories at Kingsbridge	1,149,924.00	
Small Mains in Bronx	145,687.00	
		3,780,272.67
		$42,828,658.35
Value of the Property of the Consolidated Gas Co. of New York used in the Gas Business as of June 1st, 1923		147,027,062.00
		189,855,720.35

The appraisal of Land by Mr. F. K. Stevens was used in the above values.

[fol. 2398] New York, June 17, 1924.

Met pursuant to adjournment.

FRANK H. NICKERSON, a witness on behalf of the plaintiff, being duly sworn, testified as follows:

Direct examination by Mr. Ransom:

I am connected with the Consolidated Gas Company as Assistant Secretary. I have been connected with the Consolidated Gas Company for twenty-seven years. Aside from attending the public schools, my education has been gained largely in the actualy work of the company and in various accounting and technical organizations of the Consolidated Gas Company and of the gas and electric industries. I did, however, pursue courses at New York University, in subjects closely related to my daily work. On entering the employ of the Consolidated Gas Company in 1897, I began work at the Hester Street Commercial Office. I worked at that office in various positions and capacities, to gain a familiarity with the various phases of the work of the Commercial Department and the branch offices, although my relationship was primarily to accounting matters. In July of 1900, I was transferred to the General Office of the Consolidated Gas Company as Assistant to the Controller. Mr. Robert A. Carter was at that time Controller of the Company. He had formerly been employed at the Hester Street branch office of the Commercial Department. From that time, in 1900 until Mr. Carter's death in February of the present year, I worked closely and continuously under his direction and supervision. He meanwhile had become secretary, and later, vice-president, of the Consolidated Gas Company. In 1906, I was given the title of Chief Statis- [fol. 2399] tician of the Consolidated Gas Company, and in January of 1919, I was appointed to my present position as an Assistant Secretary. These promotions have, however, been for the most part changes in title and compensation, rather than in the duties which I have performed under the direction of Mr. Carter and Mr. Brundage. In relation to

correspondence, records and administrative routine, I perform some duties as Assistant Secretary; but my principal work relates to the analysis and comparative study of the results of operations of the Consolidated Gas Company and other gas companies and the preparation and verification of various satistical and financial reports, for the officers of the Consolidated Gas Company. Under the direction of Mr. Carter, a system was established for the close and continuous study and analysis of the operations and operating costs of the Consolidated Gas Company and, for comparative purposes, of other companies of the Consolidated Gas Company system. For this purpose, authenticated monthly and other reports are sent, in the regular course of business, by the respective companies, to the office of the Secretary of the Consolidated Gas Company; and these are analyzed, studied and compiled, by me and by members of my staff working under my immediate supervision. Whenever any apparent need may arise, these monthly and other reports are checked to and with the books and/or records of the reporting companies, by me or by other [fol. 2400] members of the accounting staff of the Secretary's office. They are also verified in connection with the preparation of the annual reports of the various companies to the Public Service Commission and to the taxing authorities. The records kept in my office are also used in the checking and verification of bills rendered to the Consolidated Gas Company by other gas companies, for gas sold to the Consolidated Gas Company and/or for the use of property owned by such other companies but devoted, wholly or in part, to the service of Consolidated Gas Company's consumers. The bills as rendered show the details of the cost of the manufacture of the gas so manufactured for and furnished to the Consolidated Gas Company. The quantities of coal, oil, and other materials, and of the cost of labor, repairs, etc., are shown as a part of the bills as rendered. These bills are checked and verified, in the course of audit, and these reports in my office are used as one of the methods of such verification. The accounting bases for the bills rendered by or to the Consolidated Gas Company, for use of property and facilities, pursuant to the Joint Facilities' Reports of Mr. George E. Woods, are personally verified and confirmed by me, in the regular course of my duties and in behalf of the Consoli-

dated Gas Company, before the same are approved by the Consolidated Gas Company. One of my duties, for many years, under the direction of the officers of the Company, [fol. 2401] has been to make a continuous study of the financial requirements of the Consolidated Gas Company, in respect of its needs as to working capital for gas purposes and otherwise. I am a member of the American Gas Association and of the Society of Gas and Electric Accountants. During the years 1922 and 1923, I was the president of the Society of Gas and Electric Accountants.

I have prepared certain tabulations and summaries from existing exhibits in this case. Referring to the exhibits placed in evidence by Mr. Teele, which were Plaintiff's Exhibits Nos. 813 and 816—the cost of production and distribution of gas for the years 1922 and 1923, respectively, I have prepared statements of the cost of production and distribution of the gas sold by the Consolidated Gas Company on the basis of rearranging, in certain respects, the classification shown in the two exhibits. I have eliminated in my classification from operating expenses, payments which are for the use of property of other companies devoted to the service of the Consolidated Gas Company's consumers, to the extent of the interest included in that payment, and I have reclassified the sums paid by the Consolidated Gas Company for the cost of gas purchased so as to identify it with the items of materials, labor and other expenses. Referring to the year 1923, this statement which I have prepared is such a reclassification of the matters shown in Mr. Teele's exhibit. And, in respect of the matters shown, I have also checked it with the bills rendered to and paid by the Consolidated Gas Company for gas pur- [fol. 2402] chased and for use of properties of other companies devoted to the service of the Consolidated Gas Company, and have in that way shown, for example, the total cost of materials and labor entering into the gas sold by the Consolidated Gas Company. And in respect of distribution and other expenses, I have shown separately and identified on each sheet sums paid on account of the gas sold by the Consolidated Gas Company indirectly through the payment of such items to other gas companies from which the Consolidated Gas Company purchases the gas. Take, for example, on Sheet 4, the item of Taxes, Mr. Teele

showed in Plaintiff's Exhibit No. 806 the taxes paid directly by the Consolidated Gas Company, and he also shows, in connection with the case of purchased gas, certain taxes which were paid by the Consolidated Gas Company to the Astoria, East River & Standard Companies, as a part of the payments by the Consolidated Gas Company to those companies. I have brought those items together here so as to show the total of the taxes in connection with property in operation used in serving the Consolidated Gas Company's consumers, and, in the same way, with respect to items of retirement expense, the item in Insurance, and the small item of General Office salaries of the Astoria Light, Heat & Power Company, included in the price paid by the Consolidated Gas Company for gas furnished by the Astoria Light, Heat & Power Company. In other words, this exhibit gives exactly the same cost of production and distri-[fol. 2403] bution and the same cents per thousand, and the same items that are shown in Mr. Teele's Exhibit No. 816, but eliminating the amount of interest paid as a return on investment in the case of the other companies. These costs relate to the quality of gas actually supplied in 1923, and I added a foot-note with reference to the testimony in this case showing what would have been the additional cost according to the testimony of Mr. Woods of gas if not less than 650 B. t. u.'s had been furnished.

I have computed, at the end of page 44 the amount required for return on investment as shown on Mr. Brundage's Exhibits in the year 1923, and in the second instance, the similar computation based on replacement costs as shown by the exhibits placed in evidence here by Colonel Miller and the appraisals which led up to his figures.

On Sheet 5, which is headed "Schedule A," I have shown the summary of the investment used in my computation on Sheet 4 as taken from Brundage's Exhibit, especially Exhibit No. 831, and on Schedule B, I have similarly shown the replacement cost taken from the various exhibits indicated according to this classification. In other words, in respect of the cost of production and distribution, this statement is prepared on the basis of excluding from operating expenses of the Consolidated Gas Company any payments made by it for the use of property not owned by it, and places such property all in the rate base, irrespective of whether it is

owned by the Consolidated Gas Company or owned by some other company. This statement is true and correct on that basis. In respect of the cost of gas and payment for [fol. 2404] the use of property to the Astoria Light, Heat & Power Company, this agrees with Mr. Teele's exhibits. I have also checked it with the Astoria books and also checked it to the Astoria bills to the Consolidated Gas Company for gas purchased. In the regular course of business, I check these bills as rendered. I audit the accounts of the Astoria Light, Heat & Power Company and confirm their charges as rendered. That is part of my duties on behalf of the Consolidated Gas Company. I have simply shown by reference to Mr. Woods' testimony what would be the addition to the cost actually incurred during the year.

(Schedule received in evidence and marked Plaintiff's Exhibit No. 888.)

In a similar way, (with respect to the Teele Exhibit No. 813), showing the cost of production and distribution of gas for the year 1922, I prepared a statement which made the similar reclassification and computation on the Teele exhibit for the year 1922 operations, and I confirmed and checked it in the same way. It corresponds to the costs and amounts shown in the Teele exhibits, and I have made the same computations and given the same summaries with respect to investment and replacement costs, indicating the sources of all the figures, those sources being Exhibits in this case, and computations made by me from those exhibits. (Schedule received in evidence, and marked Plaintiff's Exhibit No. 889).

For convenience or possible convenience, I prepared two schedules which show the details of all of the replacement [fol. 2405] costs of property which have been shown in the evidence in this case in the exhibits. I took this from the exhibits of Colonel Miller and others. And, in respect to each and every item of property, I have shown the figures which are included in the Miller exhibits and the Miller summary, so I have a complete picture in respect of the sum at which each item of property appears in the aggregate valuation. In this proposed exhibit, I have set out two schedules; first, a schedule X, which uses the figures for land as appraised by Mr. Huntley, and Schedule Y, which

uses the figures for land as appraised by Mr. Stevens, and I have shown, in respect of each item of property, each manufacturing station, holder station, and each of the shops and each of the properties, all the way through, which are owned by the Consolidated Gas Company or are used in respect of serving the Consolidated Gas Company's consumers, the sum at which its value has been testified to in this case and the exhibits where those figures are to be found. And, in the case of mains and the like, which are apportoined between companies, I have shown the apportionment on the basis of the Woods report and given details of the resultant figures for the apportionment of a particular property. This is purely a rearrangement of facts shown in existing exhibits in the case, but so as to give the details with respect to these items of property. I have not in every case mentioned the name of the witness. I have given the exhibit number or numbers and a reference to the mimeo-[fol. 2406] graphed stenographic report. And then in the numbered statements which are called Nos. 1, 2, 3 and 4, based on the Huntley testimony, and then using "A" lettering in respect to properties where Mr. Stevens' valuation enters, I have given details of any apportionment including the apportionments of overheads—that is, of the undistributed structural costs.

(Schedule received in evidence and marked Plaintiff's Exhibit No. 890.)

I have prepared, from my records, a statement of the cost of production and distribution of gas for the calendar year 1923, by the Consolidated Gas Company and its affiliated companies on the so-called transfer gas system.

(Schedule marked Plaintiff's Exhibit No. 891 for identification.)

This statement eliminates all inter-company charges, and shows all the property in the so-called rate base. This shows a first rate base computed on the investment basis, and second a rate base computed on replacement cost in so far as the Consolidated Gas Company and the Astoria Company are concerned and only the basis of investment with respect to the other companies. This is prepared in the same way as my previous exhibits, and with the same

classifications as are used by me and by Mr. Teele as appear on the company's books. This shows the quantities and unit prices and costs per thousand cubic feet of gas made, among other things, and also the cost per thousand feet of gas sold for the system as a whole. This is true and correct according to the records in my office.

In the course of my business, I receive monthly reports [fol. 2407] from the other companies and in the course of my business I check the Astoria costs, with their books, on the bills that are rendered. Occasionally I check the costs of other companies, that is, not regularly. As to what is meant by the expression "System Gas Companies," if you will notice at the top of page 3, and on the other pages inside the cover, you will find the companies are mentioned specifically, the Consolidated Gas Company, the East River Gas Company, the Standard Gas Company, the Central Union Gas Company, the Northern Union Gas Company and the New Amsterdam Gas Company. Those are the companies which are on the so-called transfer gas system which has been mentioned and described and discussed in the record in this case, and they are covered by the Woods Report.

By the Master:

This exhibit is a combination of the cost of making gas as shown by these various companies. This particular statement is a summarization not only of the gas sold to the Consolidated Gas Company but a summarization of the cost of the gas made and sold by each of the system companies, brought together as a whole.

By Mr. Ransom:

This statement is just the same as though all of these plants and all of the operations of these companies were the operation of one company and that all of the materials, labor and salaries and other expenses were grouped together from the different plants, shops and stations. The intercompany relations are all eliminated in this statement, both Receipts and Expenses, so that the sheets, for example, showing the cost of all the coal and oil and labor [fol. 2408] and taxes and the other items of expense that

are incurred in making or distributing any of the gas made and sold by the system companies on the transfer system are here shown.

By the Master:

In other words it is an exhibit which shows the system as if it were one Company both as to operation and also as to investment. It is not only one investment. It is computed both ways. Replacement costs in respect to the Astoria and Consolidated and investment only as to the New Amsterdam, East River and other gas system companies, and also the entire investment as to all companies.

By Mr. Ransom:

With respect to this Schedule B on page 6 of this exhibit, this is of necessity a kind of a hybrid statement. I have used replacement cost in respect of the property of the Consolidated and Astoria Companies, as shown by the exhibits submitted in this case, but with respect to the property of other companies on the transfer system. I was not able from the Consolidated records and the Consolidated exhibits to take and use figures for replacement cost in respect of those other companies.

By the Master:

This statement includes a statement of the cost of operation and of the receipts as shown by the books of all the system companies. It shows the investment of all the system companies as shown by the Public Service Commission as of August 30, 1922.

By Mr. Ransom:

By computation states very clearly that in respect to companies other than the Consolidated and Astoria it is based on the properties of other system companies on the basis of the investment on June 30, 1922, as found by the Public Service Commission, plus net additions to fixed capital at actual cost to December 31, 1922, and those investment figures as to other companies are of record in [fol. 2409] this case in the opinion and order of August 30, 1922, to the extent of the investment as of June 1, 1922,

and with additions as shown by the books since that date, and with additions as shown by my own records.

I similarly prepared a statement (marked Plaintiff's Exhibit No. 892 for Identification) with respect to the cost of production and distribution of gas for the year 1922 for the same system companies on the transfer system, and I used as a basis the same factors. This is true and correct according to my records, and the computations made by me that are shown hereon were known to be correct.

(Statements or schedules marked Plaintiff's Exhibits Nos. 891 and 892 for identification, were received in evidence, and marked, respectively, Plaintiff's Exhibits Nos. 891 and 892.)

Referring to Exhibits 888 and 889, which relate to the cost of production and distribution of gas by the Consolidated for the years 1923 and 1922 respectively, the computations of return upon investment are therein set forth exclusive of any return upon going value, and likewise the computation of return upon replacement cost, exclusive of going value, and likewise in the exhibits for identification 891 and 892, my computations of return upon investment and return upon replacement cost are exclusive of any return upon going value.

[fol. 2410] HERBERT C. DAVIDSON, a witness on behalf of the plaintiff, recalled.

Direct examination by Mr. Ransom:

(Statement entitled "Reference Data in Connection with Study of Going Value of the Consolidated Gas Company of New York, prepared by Walter R. Addicks, vice-president, checked and verified for Mr. Addicks by Herbert C. Davidson, Assistant Secretary," was marked Plaintiff's Exhibit No. 893 for identification.)

At Mr. Addicks' request, I prepared certain data which he indicated to me and also checked and verified certain data which he indicated to me that he desired to have, in connection with a study of going value which he proposed to make, and this exhibit 893 for Identification is such data. In part it was a matter of checking or completing data which Mr. Addicks turned over to me. In other respects

it was a matter of putting together from the company's books or other sources figures which he indicated to me that he wished. He also submitted to me various computations which he had made. I checked those and he rechecked my figures on some of the items. In the data sheets I have taken from the company's books the figures as to volume and growth of gas sales and the revenues therefrom, and I have computed the increase in cubic feet and in revenues. That is my own computation. The other figures are figures of record in the company's records. On the second sheet I have taken the meters in active service as of December 31st of the indicated years and the increase in amount and per cent. On the third sheet I have computed the sales per meter and the annual sales per meter and shown the percentage of increase on each of those, and I have shown on the fourth sheet the mileage of mains according to the books and then computed the sales per mile of main in cubic feet and the meters per mile of main. On the fifth sheet I have shown from the books the investment from 1884 to date, as [fol. 2411] of December 31st of each year, and shown the increase in dollars and in percentage. Those figures are also set forth in Exhibit 820 to 823, I think—the investment figures. On the sixth sheet, I have shown the increase in population of Manhattan Island from 1880 to 1923. That tabulation is not from the company's books. On the seventh sheet I have shown the increase in the number of employees of the company, classifying the same by departments from 1913 to 1923, lack of that classification between departments not available. On the 8th sheet I have taken from the company's books the amount of its outstanding capital stock and other obligations exclusive of current liabilities, from 1884 to date. On the ninth sheet I have taken from the company's books the rate of dividends paid in each year from the common stock. On the tenth sheet I have taken certain figures from the company's books and then made computations with respect to the actual cost to the company of new business acquired since 1909, showing the cost of promotion expense and Utilization Department Expense only, in terms of the additional business secured. Page 10 is in terms of annual gas sales, and page 11, the following sheet, is in terms of growth or net increase in meters. I have made the computations which are there indicated for the 14-

year period, for the last ten-year period as well as the average for the whole. And on the eleventh sheet I have shown from 1909 to date the actual cost of the items indicated in [fol. 2412] respect of new business, in terms of meters in active service, and I have made certain computations there with respect to the unit cost of those items. These computations on sheets 10 and 11 were computations which Mr. Addicks asked me to make. Sheet 12 shows the number of rented appliances, that is, stoves, on the district, and the annual revenue from such rentals; also the number of appliances sold annually and the gross profits, that is, the excess of the sales price over the purchase cost of those stoves annually. That statement of number of appliances sold is number of appliances sold by the Consolidated Gas Company and it does not include appliances sold and set in Consolidated territory but sold by department stores or other appliance concerns. On page 13 I have shown the actual cost of setting meters during the year 1923. That is a computation made by me at Mr. Addicks' request. It is taken from the books of account. The division of the cost by the number of meters set *is* a computation made by me. And on the 14th sheet I have shown the same thing in respect to the cost of setting appliances in the year 1923 and made a computation dividing it by the number of appliances set on the same basis as meters on page 13. On sheet 15 I have shown the cost of superceded property; that is, the actual withdrawals from 1884 to 1923 in comparison to the volume of gas sold, according to the company's books and records. On the 16th page I have shown in this statement the normal working capacity of the manufacturing stations each year from 1899 to 1923, together with the maximum and minimum [fol. 2413] days' send out of each year. That is from the company's books and records. From 1907 I have included the Astoria send-out and Astoria capacity with it, so that is from both the Consolidated and the Astoria records, except in respect of Sheet 6, which relates to the population of Manhattan Island, the various facts set out in these sheets are true and correct according to the company's books and records. They are all figures from the company's records, or computations of my own based from such figures, with the exception of Schedule 6. I either checked or made all of the computations and I verified from the books all of the figures shown as taken from books or records. The population

figures were taken from the population of the years in which a Federal census was taken. The annual population from 1910 down to date was taken from the official figures of the City of New York. Likewise, the 1895 assessment came from that source. In addition to checking or preparing this reference data, Mr. Addicks also asked me to check various computations which he had made on the basis of indicated data in a study and estimate which he had made of going value and I made such a check and verification. Where references to exhibits in this case were made in that study, I checked or verified those references. The computations contained in this study were computations furnished to me by Mr. Addicks for checking and verification. They were furnished to me in his own handwriting, in the first instance. [fol. 2414] I checked them and I subsequently went over them with him. Referring to pages 22 and 23, which relate to the cost of setting meters and appliances, those figures that I took were from the company's books, and I excluded from my computations the items which I have indicated as excluded. The figures and the computations of Mr. Addicks' study are likewise figures which I have checked with the company's books and records and which are checked by me as correctly made, and I have taken up each one with Mr. Addicks.

[fol. 2415] WALTER R. ADDICKS, a witness on behalf of plaintiff, recalled.

Direct examination by *Mr.* Ransom:

There is a difference between the value of a gas property and enterprise such as the Consolidated Gas Company as it would stand with construction completed, plants and distributing system ready to operate, and the value of the property of the Consolidated Gas Company or of such a company as exists at the present time, with an established business, a developed earning capacity under fair rates, and with its properties coordinated and tuned up and efficient routine and records perfected.

I have formed an opinion as to the value of certain indicated elements included within what is sometimes called

going value and I have made various computations for the purpose of checking and corroborating that estimate. Those computations were personaly made by me, along the lines which I deemed proper, for the purpose of corrborating or checking my opinion. In the preparation of my study I asked Mr. Davidson, as assistant secretary in immediate charge of the accounting staff of the company, to check certain data which I had obtained from my own records, and I also asked Mr. Davidson to prepare certain material for me along the lines which I indicated, and to check certain material. That material which Mr. Davidson checked or prepared for me along indicated lines is embodied in Plaintiff's Exhibit No. 893 for Identification.

I set out in my study of going value a definition and enumeration of the factors which I had taken into account. [fol. 2416] This subject of going value is one which I have studied since a number of years back. I have not only considered it, but I have studied computations and publications on the subject. I have examined the definitions of the elements of going value as contained in various decisions of courts. I have in this study of going value used certain of those definitions or quotations which seemed to cover the elements which I have considered in going value, whether in my computations or otherwise.

In my judgment and from my opinion and experience going value is a matter of opinion and judgment which is not susceptible of exact mathematical proof. My purpose in submitting these computations which are embodied in this study was simply that they have confirmed the judgment which I have reached, or add some light to the whole question of going value, and they certainly confirm my minimum estimate of going value for the Consolidated Gas Company.

If I were asked the appropriate questions I would testify to each of the matters and things set out in this study, and I would give my enumeration of factors and elements as they are set out in this study and the computations which I used to check or confirm my judgment and opinion. When I was on the stand before, I testified at considerable length with respect to my experience in the gas business in New York City and elsewhere in this state and with respect to

my experience in other states, covering a period of about [fol. 2417] thirty-seven years, and this estimate is based upon that experience in gas enterprises in various parts of the country, including experience in New York City and in the vicinity of New York City, since I have been an officer of the Consolidated Gas Company, in 1903, and for a prior period when I was consulting engineer for three companies in the last century, in 1890. 1909 is the best of my recollection as the date on which I undertook an active relationship with respect to the acquisition and development of new business by the Consolidated Gas Company of New York. That is the reason why in various of these studies I have indicated the costs and experience from that time to date, because that is the period over which my active and personal relationship and knowledge were especially directed. According to my judgment and experience the indicated elements of going value in the case of the Consolidated Gas Company amount as of June 1, 1923, and as of the present time to not less than $25,000,000. That relates to going value as I have defined and described it in this study of going value.

(The following statement, referred to by the witness, was incorporated as the testimony of the witness:)

[fol. 2418] APPENDIX "C"; STUDY BY MR. ADDICKS

Consolidated Gas Company of New York

Going Value: At Least $25,000,000.00

(For my definition and enumeration of the elements included in, and those excluded from, this estimate, see pages 9 to 21, hereinafter.)

(For enumeration of various bases used to check and confirm my own estimate, see pages 3 to 9, hereinafter.)

(For detailed computations used to indicate the present replacement cost of certain elements and advantages entering into "going value," see pages 21 to 23, hereinafter.)

(For details of facts taken into account by me in making my estimate, see, also, the "detail sheets" herewith

submitted [Exhibit No. 893], the annual reports of the Consolidated Gas Company to the Public Service Commission [Exhibits Nos. 811 and 812], and other exhibits in this case.)

Discussion and Explanation of above Estimates of "Going Value"

According to my judgment and experience, the element of "going value," in the case of the Consolidated Gas Company of New York, amounted to at least $25,000,000 as of June 1, 1923, and is in excess of that sum today.

The elements and advantages comprised within "going value" as I have defined it hereinafter and appraised it, [fol. 2419] are in fact possessed by the Consolidated Gas Company of New York. They are not included within its physical property and/or working capital, as inventoried and appraised in this case. To my knowledge, the possession of these advantages and elements is of great use and advantage to the company in the conduct of its gas business.

From my knowledge of the present costs of carrying on and extending the company's gas business, including the actual cost of obtaining new consumers and additional consumption, I am strongly of the opinion that it would, as of June 1, 1923, or the present time, cost very much more than $25,000,000 to obtain now these same or equivalent elements and advantages, if they were non-existent as to the Consolidated Gas Company of New York. The present replacement cost of certain elements of "going value" would, as I compute the same, substantially exceed $25,000,000, and my computations as to these items are set out on pages 25 to 33, hereinafter.

From my long familiarity with the affairs of the Consolidated Gas Company, I have no hesitation in saying that in my opinion these elements and advantages have been obtained through the actual expenditures of much more than $25,000,000. For reasons hereinafter set out in more detail (especially at pages xxxiv to xxxvi), it is my further testimony that these advantages and elements have in fact cost the investors of the company much more than that sum, expended from earnings within the limits

of a fair return—monies which otherwise would have been distributable and distributed to the stockholders of the company.

From my 37 years' of active experience in the gas busi- [fol. 2420] ness, involving a first-hand knowledge of the affairs of many companies in several States and a considerable familiarity with public utility enterprises in many other States, it is my judgment that a group of investors desiring to purchase a large gas utility enterprise in a city such as New York, would pay, and would expect to pay, very much more than $25,000,000 for the elements and advantages which constitute "going value" in the case of the Consolidated Gas Company of New York. They would pay at least this much for these advantages, and the possession of them would be deemed worth at least that much to such purchasers (see illustration on pages 14 to 15, hereinafter).

In fact, I may say, frankly, that if the trustees and officers of the Consolidated Gas Company were in a state of willingness to sell its gas properties and business to a corporate or individual purchaser for a reasonable and adequate figure, and a responsible offer were received in a figure substantially in excess of $25,000,000 more than the determined value of the physical property plus working capital, I would advise against its acceptance.

Twenty-five million dollars is, in my judgment, a low and conservative sum to represent the actual original cost, the present replacement cost, or the present exchange value, of the elements and advantages which I have included as hereinafter shown.

Basis of Reaching a Reliable Judgment as to the Worth of the Advantages Giving Rise to "Going Value"

The amount of the "going value" of a given gas enterprise depends upon the advantages which the enterprise has [fol. 2421] in fact developed and acquired, from its establishment to the present time. These are the result of the commercial, financial and engineering history of the particular property. Their present worth is a matter of executive judgment and opinion, based upon the facts of the particular enterprise.

Different executives and engineers use different methods of computation, and may employ different units, in checking and confirming their estimate of "going value," in the actual conduct of the utility business; but their estimates remain essentially a matter of opinion, judgment and experience.

It ordinarily is not practicable to ascertain from a gas company's books, if it has been in existence for many years, the full actual cost of these elements and advantages; and I would not regard such original cost as reflecting their present worth, even if the original outlay were fully ascertainable. The actual cost to replace these advantages and elements today, if they were nonexistent, cannot be ascertained exactly, although it is commonly estimated and calculated, in business transactions. These advantages do exist, are already possessed, and so are not actually being replaced.

The sum which purchasers of a utility enterprise will pay for its "going value" cannot be ascertained exactly, in a precise sum, unless an actual negotiation and sale takes place. At the same time, a large part of modern business is based upon estimates of what willing purchasers will pay, for tangible and intangible property.

Therefore, according to my experience, the replacement cost and present worth of the possession of these elements [fol. 2422] and advantages becomes a matter of opinion and judgment, based on general experience and the particular case.

In the public utility business, any difficulty which may inhere in the making of an exact estimate or calculation needed as a basis for executive action and the expenditure of monies does not deter the making of the best estimate practicable, in the light of experience and all pertinent facts, and does not deter the carrying out of far-reaching projects in reliance upon the soundness of such estimates.

Properties and businesses are bought; construction plans are launched; the needs of new plant and distributing capacities are anticipated and provided; future financial requirements are anticipated; potential future earnings of a business are gauged—all on the basis of just such estimates, based on experience, judgment and pertinent facts. Hun-

dreds of millions of dollars are expended and invested every year, upon the basis of just such estimates and calculations.

Just as the replacement cost of existing physical property is estimated; just as the future requirements of a given company for working capital, construction capital, operating expenses, etc., are estimated; just as the future growth of a company's sales are forecast and anticipated in plant capacity; just as the cost of securing new business is estimated in private industry, so the cost of replacing the elements and advantages which comprise "going value" can, in my opinion, be estimated with reasonable certainty.

Inasmuch as the gas property and business of the Consolidated Gas Company are not being sold and inasmuch [fol. 2423] as these elements and advantages which comprise "going value" are already possessed are not being replaced, I know of no way now to indicate their value, except as a matter of opinion and judgment, fortified by such facts and computations as may seem pertinent.

In this study, I have made the kind of conservative estimate which I would make for prospective investors. Doubts as to elements and amounts I have tried to resolve against the company, in reaching the figure which represents my judgment.

Checking of My Total with Different Units Used in Stating or Computing "Going Value"

I have said that, for the purposes of this case the element of "going value" inhering in the gas properties and gas business of the Consolidated Gas Company, was, on June 1, 1923, and still is, at least the sum of $25,000,000, according to my opinion and judgment. I have deliberately taken what seems to me a minimum figure, less than the actuality.

No computation, calculation or basis of estimate would lead me to a figure lower than $25,000,000 for all of the elements entering into "going value" as I have defined it, in the case of a company such as the Consolidated Gas Company, using in its gas business property which has cost about $94,000,000, and of which the present replacement cost exceeds $190,000,000 exclusive of "going value."

[fol. 2424] Percentage of Present Value

If asked to estimate, in relation to the present value of the physical property, the "going value," at the present time or as of June 1, 1923, of a gas property and business serving a substantial area within a very large city, I would expect, from my experience, the "going value" to amount to nearly, if not quite, twenty per cent. of the present replacement cost of the fixed capital and working capital used in serving the company's consumers.

On this basis, the "going value" of the Consolidated Gas Company would approximate $38,000,000, instead of the $25,000,000 I have stated as my judgment of a minimum figure as to the Consolidated Gas Company.

Development Cost per Active Meter

If asked to estimate the original cost, or the present replacement cost, of obtaining and attaching the business of a large gas enterprise in a very large city, as of June 1, 1923, or the present time, and to state such cost in terms of the number of consumers served, my judgment experience and opinion would lead me to expect and estimate, for this element and advantage alone, a cost of at least $40 per active meter.

If this basis were applied to the Consolidated Gas Company, this item of cost of obtaining and attaching the business would alone produce a figure of at least $22,000,000, as compared with the sum of $25,000,000 which I have stated as a minimum for all of the elements of "going [fol. 2425] value." As hereinafter indicated, these other elements alone would approximate my minimum figure.

Relation to Annual Revenues from Gas Sales

If asked to estimate the replacement cost, now or as of June 1, 1923, of the elements and advantages comprising "going value" as hereinafter indicated, my judgment and opinion would lead me to expect that the necessary expenditure, in the case of any large gas company, would be equal to at least the amount of its annual revenues from the sales of gas at compensatory rates.

If this basis of relationship to gross revenues from annual sales were applied to the Consolidated Gas Company, it would produce, in 1923, under the rates actually charged, a figure of at least $27,000,000, instead of the sum of $25,000,000, which I have stated as a minimum as to this company. The rates actually charged by the Consolidated Gas Company during 1923 did not, in my opinion, yield the company an adequate return (eight per cent upon either the replacement cost of its property or the amount of the investment therein) (Nickerson Exhibits of June 17, 1924; Teele Exhibit No. 816; Brundage Exhibit No. 831; Miller Exhibit No. 873X).

No Single Basis of Estimate is Given Controlling Effect

But I do not attach finality or controlling effect to any of these bases, or to all of them, or to any other.

The amount of "going value" cannot be measured, computed or estimated exactly. There is a range within which [fol. 2426] different methods lead to somewhat different figures and leave differences in amount which I know no way of resolving with mathematical certainty.

Within these limits, the amount of "going value" is, I think, a matter of sound opinion and judgment, based on executive, engineering and commercial experience. All of the above bases of computation are used, at times, in the gas industry. Each of them furnishes a certain check on or confirmation of an estimate. I know of no way of resolving with exactness the margin of differences in result. I take them all into account, with the further computations hereinafter indicated, and then adopt, for the purposes of this case, a figure lower than any such method of computation produces.

Nature of the Elements and Advantages Entering Into and Giving Rise to "Going Value"

In indicating the various elements and advantages, the presence and possession of which leads me to the opinion that "going value" exists in the case of the Consolidated Gas Company and its gas business—the same being the elements and advantages which I took into account and

which in my opinion have a present worth of at least $25,000,000—I use in first instance and in part, the phraseology of Courts and Commissions, because their language states with exactness the things which I included and denotes at least some of the elements and aspects which I thought it proper to execlude from consideration. If I had not thus adopted and utilized the phraseology of judicial tribunals, I would have tried to express the same ideas and indicate [fol. 2427] the same elements, although I could not have done so as satisfactorily and definitely.

"That there is an element of value in an assembled and established plant doing business and earning money, over one not thus advanced, is self-evident. This element of value is a property right, and should be considered in determining the value of a property upon which the owner has a right to make a fair return; when the same is privately owned although dedicated to public use."

Des Moines Gas Co. v. Des Moines (238 U. S. 153, 165);

Denver v. Denver Union Water Co. (246 U. S. 178, 184, 191-2).

In the Des Moines case, the same thought was further expressed in a slightly different phraseology:

"the value which inheres in a plant where its business is established, as distinguished from one which has yet to establish its business."

In People ex rel. Kings County Lighting Co. v. Willcox (210 N. Y. 486), Judge Miller indicated some of the early processes and activities which create elements and advantages comprised within "going value," although I did not follow or take into account the method approved by him for computing the present worth of these elements. Judge Miller said:

"What, then, is 'going value,' and how is it to be appraised? * * *

"It takes time to put a new enterprise of any magnitude on its feet, after the construction work has been finished. [fol. 2428] Mistakes of construction have to be corrected. Substitutions have to be made. Economies have to be studied. Experiments have to be made, which some-

times turn out to be useless. An organization has to be perfected. Business has to be solicited and advertised for. In the case of a gas company, gratuitous work has to be done, such as selling appliances at less than a fair profit and demonstrating new devices to induce consumption of gas and to educate the public up to the maximum point of consumption. None of those things is reflected in the value of the physical property, unless, of course, exchange value be taken, which is not admissible in a rate case. The company starts out with the 'bare bones' of the plant, to borrow Mr. Justice Lurton's phrase in the Omaha Water Works Case (Supra). By the expenditure of time, labor and money, it coordinates those bones into an efficient working organism and acquires a paying business. The proper and reasonable cost of doing that whether included in operating expenses or not is as much a part of the investment of the company as the cost of the physical property."

"Going value," as I have estimated it, has been further indicated as comprising

"that value which attaches to every well organized utility operating efficiently so that a profit may be realized with reasonable rates and it is the difference between the value of the bare physcial property and the fair value of the property in question."

Re Indianapolis Water Co. (Ind. P. S. C., P. U. R. 1924 B, 206, 319).

"The difference between the cost of reproducing the property in its present condition as a bare plant and its [fol. 2429] value as a going business concern, serving a definite territory and population and having its organization and business connections complete."

Re Virginia Ry. and Power Co. (Va. State Corpn. Comm. P. U. R. 1924 A, 566).

"The difference in value between the dead structural value, fully completed but not in operation, and the same property * * * organized, successfully operating, with customers attached and revenue coming in."

Fort Wayne v. Home Tel. & Tel. Co. (Ind. P. S. Commm; P. U. R. 1920 D, 82, 111).

"An expression of the added value of the plant as a whole over the sum of the values of its component parts, which is attached to it because it is an active and successsful operation and earning a return."

Knoxville Water Co. v. Knoville (212 U. S. 1, 9).

"The option to purchase excluded any value on account of unexpired franchise; but it did not limit the value to the bare bones of the plant, its physical properties, such as its lands, its machinery, its water pipes or settling reservoirs, nor to what it would take to reproduce each of its physical features. The value, in equity and justice, must include whatever is contributed by the fact of the connection of the items making a complete and operating plant. The differences between a dead plant and a live one is a real value, and is independent of any fianchise to go on, or any mere good will as between such a plant and its customers. That kind of good will, as suggested in Willcox v. Consoli- [fol. 2430] dated Gas Company, 212 U. S. 19, is of little or no commercial value when the business is, as here, a natural monopoly, with which the customer must deal, whether he will or no."

Omaha v. Omaha Water Co. (218 U. S. 180, 202).

"The original cost of the construction cannot control, for 'original cost' and 'present value' are not equivalent terms. Nor would the mere cost of reproducing the waterworks plant be a fair test, because that does not take into account the value which flows from the established connections between the pipes and the buildings of the City. It is obvious that the mere cost of purchasing the land, constructing streets—in other words, the cost of reproduction—does not give the value of the property as it is today. A completed system of water works, such as the company has, without a single connection between the pipes in the streets and the buildings of the city, would be a property of much less value than that system connected, as it is, with so many buildings, and earning, in consequence thereof, the money which it does earn. The fact that it is a system in operation, not only with a capacity to supply the city, but actually supplying many buildings in the city—not only with a capacity to earn, but actually earning—makes it true

that 'the fair and equitable value' is something in excess of the cost of reproduction."

National Water Works Co. v. Kansas City (Opinion of Mr. Justice Brewer, 62 Fed. 853; see 218 U. S. 202).

[fol. 2431] The New Jersey Supreme Court, in the Passaic Gas Rate Case (84 N. J. L. 476), gave expression to elements and advantages, inhering in an established gas business of long standing, which I have taken into account in my estimate:

"The cost of a gas plant includes not merely the loss in interest while the plant is in course of construction and is building up a paying business, but even in the case of an old established plant, for the manufacture and distribution of a commodity to the use of which the public has become so accustomed that it seems a necessity, there must be loss while pipe lines are extended to await the coming of consumers as the city extends. There is the cost of securing and retaining customers, of encouraging the greater use of gas for fuel and for light by the introduction of new and improved appliances, the necessary loss attending experiments that promise improvement. * * * the expense that must attend and the additional value that arises from the uniting of separate concerns and the organization of a great industry with a view to economical production * * *. What item should be charged to construction; what to business development; how much to current expenses, and how much to permanent investment of capital, are all most important practical business questions. However these questions may be solved, all these expenses must be met."

I have used the foregoing quotations only for convenience in definition and phrasing. I do not attempt to pass upon the legal questions or to analyze the facts which were presented in the particular cases from the opinions in which I have quoted. Legal questions as to the allowance of "go-[fol. 2432] ing value" as a part of the "rate base" I do not presume to pass upon or discuss. I know that "going value" exists as to the properties of the Consolidated Gas

Company, and, in my opinion, its amounts, in relation to the elements hereinafter defined, is not less than $25,000,000.

Definition and Illustration of "Going Value"

If I were to undertake my own definition of the "going value" which I have estimated, I would say that it is the part of the aggregate value of the enterprise which is not represented by its physical property and working capital. It consists principally of an established business, co-ordinated organization and personnel, tuned-up and ironed-out plants and properties, and other conditions and advantages necessary and useful in the creation and carrying on of an efficient public service, acceptable to the consumers and compensatory to the investors under fair rates.

I have sought to ascertain and estimate the element in the value of the property of the Consolidated Gas Company of New York which represents the difference between the value of the property and enterprise as it would stand with construction completed, plants and distributing system ready to operate, etc., and the value of the property as it exists at the present time, with an established business, with a developed earning capacity under fair rates, with its properties coordinated and tuned up, with its organization and personnel developed and trained and coordinated, with efficient records and routines perfected, and with the experience attained and adjustments made which characterize a going concern.

[fol. 2433] If I were asked to illustrate this difference and demonstrate that existence of "going value," I would cite among other things, the following adaptation of a somewhat familiar illustration:

Suppose the corporate owners of an operating gas property had agreed to sell and transfer it on June 1st for a sum which we will assume as $5,000,000. All legal details as to title, form of conveyances, have been agreed upon. On the day set for closing, the representative of the owners came to the appointed place and said:

"Here are the conveyances of all the plants and properties; they have been approved as to form and contents; we hereby tender them and wish to receive our $5,000,000, as agreed.

"But before I deliver these papers and take your money, I think I ought to say to you that the company has cancelled every consumer's contract, removed every meter, brought in every appliance rented, disconnected every service, put out the fires in every plant, discharged and sent away into other employments all of its employees, destroyed all of its records, cancelled all of its contracts with third parties, so that it now has no consumers, credit relations, records, or staff of employees.

"All of the land, plants, buildings, apparatus and physical properties are, however, exactly as they are described in the conveyances. Please take the papers and give me the $5,000,000."

What would the answer be? Would the $5,000,000 be paid over? If suit was brought, would not the purchaser contend that he had agreed to pay $5,000,000 for what had been a going concern, and that he had been tendered something else, different and much less valuable—certainly at least twenty per cent less valuable?

[fol. 2434] If the purchaser had agreed to pay $5,000,000 for the property as a going concern, would he not feel that what was tendered him was worth at least $1,000,000 less, and that it would cost the purchaser at least $1,000,000 to replace and restore what the acts of the owner had destroyed and rendered non-existent?

That illustrates what I mean by "going value" and what I have tried to appraise, on a practical business basis, according to my experience.

Elements Excluded from Consideration by Me in This Estimate

I have not taken into account any properties, sales of gas, earnings or operations not a part of the gas business of the Consolidated Gas Company.

I have not included or considered any element of value arising from inter-company relationships, stocks control of other gas or of electric companies, "monopoly position" in this company's territory, or elements commonly described as "good will."

I have not computed or included any value based upon any possibility of earnings in excess of a fair return upon

the value of the property used and useful in the service of the Consolidated Gas Company's consumers. On the other hand, I have not diminished the amount of my estimate on any assumption that a hostile regulatory attitude would withhold from the company rates yielding a fair return over and above operating expenses. On a purchase and sale transaction, the amount which the purchaser would [fol. 2435] pay for a gas property might be added to by a possibility of earnings in excess of a fair return or might be largely destroyed by the menace of a rate yielding only operating expenses or less; but I have excluded both of such possibilities and have assumed fair regulation rates neither too high nor too low.

I have not considered any element of value arising from the possession of franchises or rights to use and occupy public streets and places.

I have not included within my estimate any item or element of cost arising before the beginning of construction or during construction and included in the "undistributed structural costs" as enumerated and described in exhibits in this case (Miller Exhibits Nos. 856, 866). As indicated on pages 38 to 40 hereinafter, I have for that reason excluded "possession of assembled capital" (cost of financing) from my present estimate, although Courts and Commissions have often included it as a part of "going value."

I have not taken into account any actual or estimated early deficits or losses in the development of this company's gas business and the attaching of its consumers. I have prepared my estimate as to this element on the same basis as for the other elements, viz., from the point of view of the present worth and present replacement cost of what the Consolidated Gas Company now has.

Rate History of Consolidated Gas Company

Although the Public Service Commission was created, in the State of New York, as of June 30, 1907, the Com- [fol. 2436] mission was not given jurisdiction over the rates of gas companies in New York City until the spring of 1921. By Chapter 125 of the Laws of 1906, the rate of the Consolidated Gas Company was fixed at, and limited to 80 cents per thousand cubic feet of gas sold. Prior to

that time, the rates charged by the Consolidated Gas Company were limited by governmental prescriptions and or competitive conditions.

Not until the spring of 1921 was the Consolidated Gas Company enabled to fix and put in force a rate based specifically on all of its operating costs and which included and covered fully the costs of its promotion and utilization departments in obtaining new consumers and new consumption. As of October 1, 1922, the Public Service Commission again reduced the company's rates to a point of inadequacy, as admitted by the Commission (Opinion of August 30, 1922; attached to the complaint in this action).

At least up to the spring of 1921, the actual expenditures of the Consolidated Gas Company in obtaining new consumers and additional consumption, and in obtaining the advantages and elements which comprise "going value," were, in my opinion, outlays of sums which otherwise would have gone into the company's surplus account and would have been invested in fixed capital additions or distributed to stockholders.

At least up to the spring of 1921, therefore, the expenditures of the Consolidated Gas Company to create and acquire the advantages which give rise to "going value" were at the expense of the company's shareholders and did not add to or affect the rate chargeable to consumers.

[fol. 2437] As of December 31, 1920, the annual sales of the Consolidated Gas Company were 20,753,111,600 cubic feet, and the number of meters in active service was 517,209.

As of December 31, 1920, and as of all subsequent times, in my opinion, the "going value" of the Consolidated Gas Company was at least $25,000,000 in excess of the value of the physical property (including undistributed structural costs).

Although I do not attach importance to a mere bookkeeping basis in this estimate, and am not particularly concerned with the designations or nature of the accounts to which the company's actual outlays for the creation of "going value" were at the time charged, I am strongly of the opinion that the actual investment of the stockholders of the company in the creation of such value has greatly exceeded $25,000,000, and that the present replacement cost

of what such sacrifice and abstinence of the investors has created and actually paid for, amounts to still more.

Facts and Factors Taken Into Account

My estimate relates to the present value of the enumerated elements and advantages taken into account. My estimate necessarily takes into account my long knowledge of the financial history, commercial growth, and engineering development of the Consolidated Gas Company properties and business, but it is related to conditions as of 1923 and the present time.

Although, as hereinafter shown, the present replacement cost of several of the indicated items would exceed $25,- [fol. 2438] 000,000, I do not feel that the replacement cost of such items as I have computed would fully measure the present value of all the elements and advantages comprised within "going value." To such a going concern as the Supreme Court described in the Des Moines case, there attaches, in my opinion, a "going value" not fully measured by the replacement cost of the few items I have illustratively computed.

A great many of the pertinent facts as to the company's financial, commercial and engineering history and present status are set out in the exhibits and testimony in the present record. Many appear in the reports of the company to the Public Service Commission for 1922 and 1923, which are in evidence (Exs. Nos. 811, 812).

Various facts especially brought together by me for the purpose of this study of "going value" are to be found in various "detail sheets" of which copies are herewith furnished to the defendants and have been marked as exhibits for identification in this case (subsequently received as Exhibit No. 893).

In my opinion, the elements and advantages which give rise to "going value" separate and divide themselves naturally into two groups and classes, and I shall therefore state them separately here:

The first group of elements relates to the possession of an established business and attached consumers and the cost of securing such a volume of sales.

The second group relates to other elements and advantages which inhere in tuned-up and co-ordinated properties, personnel, routines, records, organization, etc.

[fol. 2439] In my opinion, for reasons hereinafter set out, the present worth and present replacement cost of each and either group might approximate $25,000,000, although, as a minimum, I have stated only that figure for the two groups combined.

Enumeration of Elements and Factors

From my long knowledge of and familiarity with the financial, commercial and engineering history of the Consolidated Gas Company, other companies in and near New York City, and various companies in Massachusetts and elsewhere, I have taken into account the following elements, advantages and factors, grouped as above indicated:

Group One: Cost of Obtaining Consumers and Attaching Business

The expense of securing and retaining customers;

The time, labor and money required to get in touch with patrons, to make contracts, to install meters and appliances, and to secure and establish the business;

The advantages procured by canvassing, payment of commissions, advertising, free installations, demonstrations, circularization, etc., as to the use of gas and/or as to the increased use of gas;

The expense of encouraging the substitution of gas for other fuels and the greater use of gas;

The expense of devising, developing and extending new uses and better uses for gas, for light, heat and power;

[fol. 2440] The expense of introducing new and improved appliances;

The increased operating expenses and lack of earnings which would be sustained while obtaining sufficient patrons;

The actual cost of setting meters and appliances.

Group Two: Cost of Coordinating Properties, Personnel, Organization and Routines

The securing, organization, training and coordination of an efficient, harmonious personnel;

The development of cooperation, uniformity and economy in operations, between different departments and plants;

The establishment of credit relations and contracts for economical and suitable purchases of materials;

The development of a system of routines and records which keep available the fruits of experience;

The continuity of experience, which is valuable in a public utility, as in public and private industry;

The advantages of large-scale production and the assembling, coordination and tuning-up of sufficient and suitable property to fulfill such purpose, for all of the company's consumers;

The necessary losses attending experimentation, in property and methods, which promise improvement;

Cost of perfecting minor details of construction and operation; initial losses during period of training and coordinating staff of employees;

[fol. 2441] Losses representing the greater costs of operation before the properties and personnel are coordinated and tuned up.

The existence, possession and replacement cost of the advantages and elements above set forth are not included in the inventories of physical property or the calculations of working capital.

Cost of Obtaining and Attaching Business

As to the worth of the possession of the present volume of business, I have to some extent checked or compared my estimate with the results of the following computations:

(1) The actual expenditures of the company in obtaining consumers and volume of sales, over a substantial period of years, so far as ascertainable from the company's books;

(2) The actual present cost to the company of obtaining new consumers and increased volume of sales;

(3) The actual cost to the company of setting meters and appliances, which is not capitalized by the Consolidated Gas Company;

(4) An estimate prepared by me as to the cost of reproducing the company's present volume of gas business and securing certain of the advantages shown in Group Two as

well as Group One, within a limited period of years, starting with the assumed current date of completion of the reproduction of the physical property.

[fol. 2442] Cost of Setting Meters and Appliances

The Consolidated Gas Company does not capitalize the cost of setting meters and appliances. The Company, on June 1, 1923, had 550,000 meters in active service.

The actual cost to the Consolidated Gas Company of setting meters in 1923 was at least $4.13 and of appliances at least $5.00 each (see detail sheets).

There are at least two appliances connected with each meter.

A conservative figure per installation is therefore at least $14.13 (for a meter and two appliances). This was the cost of doing this work with a force of men trained and experienced.

The number of meters multiplied by $14.13 gives a figure of at least $7,771,500 for a single element, no part of which has been capitalized by the Consolidated Gas Company.

[fol. 2443] Replacement Cost of Obtaining Consumers

Based on the 1923 actual outlays the present replacement cost of merely the element of obtaining consumers might be indicated by the following computation:

	Year 1923
Promotion Office Expense	$269,437 46
Utilization Department	53,908 48
Cost of Setting Meters (exclusive of cost of meters and of cocks and connections):	
Labor (including handling)	39,030 90
Material	18,093 18
Cartage	2,304 55
Superintendence & Supplies & Expenses	12,533 76
Cost of Setting Appliances (excluding cost of jobbing on installations):	
Labor	170,097 46
Material	93,341 58
Cartage	60,281 48
Handling	34,687 60
Superintendence & Supplies & Expenses	75,449 88

Adjusting and Regulating New Appliances (excluding cost of Special Inspection for B. t. u. standard:	
Labor	10,096 22
Material	9,004 06
	$848,266 61
Meters set during year 1923	17,408
Cost of above items per meter	$48 73
Total number of meters in use June 1, 1923	550,000
Replacement cost of attaching current volume of business, on basis of 1923 actual costs above shown	$26,801,500 00

This figure of $48.73 is to be compared with the figure of $40 per meter used on page XXIII hereinbefore.

[fol. 2444] Estimate of Worth of Certain Elements of "Going Value" Based on Cost of Replacing the Volume of Business (Group One) and of Securing Certain of the Advantages Shown Under Group Two

The following computation is corroborative and illustrative merely. It is the kind of a computation I would make if I were in the employ of the prospective purchasers of a public utility enterprise, and they wished some confirmation and corroboration of the minimum figure I had given them (viz., $25,000,000 for "going value").

In making this computation, I have assumed and used the following bases, derived from my experience and from the data hereinbefore stated:

1. Present value (Replacement Cost) of the physical property and working capital on June 1, 1923 (Ex. No. 873X), $191,153,025.31. (Round figure of $190,000,000 used.)

2. Book cost of physical property and working capital on June 1, 1923 (Ex. No. 831), $93,896,012.10. (Round figure of $94,000,000 used.)

3. In the third year of operation, the plants, properties and personnel will have been ironed out, tuned up, and have "struck their gait."

Cost of gas delivered to consumers in third year of operation and thereafter is denoted as "C".

Then cost of gas delivered in first year = C. plus 15 cents.

Cost of gas delivered in second year = C. plus 7.5 cents

I deem these differentials in cost to be fully justified by my experience. (Instances will be given if desired.)

4. Price of gas based on 8 per cent. return on Item No. 1 will therefore equal C. plus 63-1/3 cents. Price of gas not assumed to include return on "going value" until present volume of sales (24 billion cubic feet of gas per annum) has been reached.

5. Price of gas based on 8 per cent. return on Item No. 2 will therefore equal C. plus 31-1/3 cents.

6. Cost of obtaining new business (denoted hereinafter as N. B.) = 60 cents per M. cubic feet during the first year, and 50 cents per M. cubic feet thereafter. I base these figures on my own experience and on the actual cost of the Consolidated Gas Company since 1909 (see "detail sheets").

[fol. 2445] 7. Meters set at the rate of 110,000 per year until 550,000 are set, all at 1923 actual cost of $4.13 per meter (actual yearly average).

8. No charge against the earnings of the 8 per cent. return on either Items No. 1 or No. 2, until after the expiration of the second year from the beginning of construction of the plant.

9. The collection and instruction and drilling of new business department to begin 15 months after the beginning of construction.

10. Gas will begin to be supplied eighteen months after construction has started.

11.

	M cu. ft. sold	Increase
1st Year	4,800,000	4,800,000
2nd Year	9,600,000	4,800,000
3rd Year	14,400,000	4,800,000
4th Year	19,200,000	4,800,000
5th Year	24,000,000	4,800,000
		24,000,000

12. The full sales are thus attained 6½ years after construction was started.

13. 1st yr. 110,000 meters will have been installed at $4.13 ea.
2nd yr. 220,000 meters will have been installed at $4.13 ea.
3rd yr. 330,000 meters will have been installed at $4.13 ea.
4th yr. 440,000 meters will have been installed at $4.13 ea.
5th yr. 550,000 meters will have been installed at $4.13 ea.

On the foregoing bases, which in my opinion are supported by the submitted data, the computations as to the cost, as of June 1, 1923, of reproducing the volume of business then possessed by the Consolidated Gas Company, become as follows:

[fol. 2446] Replacement Cost of Present Volume of Sales (Group One) and of Attaining of Certain Advantages Shown under Group Two, on Basis of Present Value of Physical Property

First Year of Operation

Return on Property for period of 6 months (½ of 8%)	$7,600,000 00
Return on Capital Expenditures for New Business (N. B.), viz., on $2,880,000 for period of 6 months, (½ of 8%)	115,200 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$8,169,500 00
Net Income from sales of Gas (48-1/3 cents per M cu. ft, on 4,800,000 M cu. ft.)	2,320,000 00
Deficiency at End of First Year	$5,849,500 00

Second Year of Operation

Return on Property (8%)	$15,200,000 00
Deficiency from First Year of Operation.	5,849,500 00
Return on Deficiency from First Year of Operation (8%)	467,960 00
Return on N. B. Expenditures of First Year, viz., 8% on $2,880,000	230,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C)	$22,298,160 00
Net Income from Sales of Gas (55.5 6 cents Per M cu. ft. on 9,600,000 M cu ft.	5,360,000 00
Deficiency at End of Second Year	$16,938,160 00

[fol. 2447] Third Year of Operation

Return on Property (8%)	$15,200,000 00
Deficiency at End of Second Year of Operation	16,938,160 00
Return on Deficiency from Previous Yr. (8%)	1,355,053 00
Return on N. B. Expenditures during First Two Years, viz., 8% on $5,280,000.	422,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C)	$34,465,913 00
Net Income from Sales of Gas (63-1 3 cents per M cu. ft. on 14,400,000 M cu. ft.)	9,120,000 00
Deficiency at End of Third Year	$25,345,913 00

Fourth Year of Operation

Return on Property (8%)	$15,200,000 00
Deficiency at End of Third Year of Operation	25,345,913 00
Return upon Deficiency from Previous Years (8%)	2,027,673 00
Return on N. B. Expenditures during First Three Years, viz., 8% on $7,680,000	614,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C)	$43,738,286 00
Net Income from Sales of Gas (63-1/3) cents per M cu. ft. on 19,200,000 M cu. ft.)	12,160,000 00
Deficiency at End of Fourth Year	$31,578,286 00

Fifth Year of Operation

Return on Property (8%)	$15,200,000 00
Deficiency at End of Fourth Year of Operation	31,578,286 00
Return on Deficiency from Previous Years (8%)	2,526,263 00
Return on N. B. Expenditures during First Four Years, viz., 8% on $10,080,000	806,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Returned (aside from C)	$50,661,249 00

Net Income from Sales of Gas (63-1/3 cents per M cu. ft. on 24,000,000 M cu. ft.)	15,200,000 00
Deficiency at End of Fifth Year	$35,461,249 00
New Business Expenditures applicable to Capital during the above 5-year period.	12,480,000 00
Amount of Replacement Cost of Present Volume of Gas Sales	$47,941,249 00

[fol. 2448] Replacement Cost of Present Volume of Sales (Group One) and of Attaining of Certain Advantages Shown under Group Two, on Basis of Actual Investment in Physical Property

First Year of Operation

Return on Property for period of 6 months (½ of 8%)	$3,760,000 00
Return on Capital Expenditures for New Business (N. B.), viz., on $2,880,000 for period of 6 months (½ of 8%)	115,200 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$4,329,500 00
Net Income from Sales of Gas (16-1/3 cents per M. cu. ft. on 4,800,000 M. cu. ft.)	784,000 00
Deficiency at End of First Year	$3,545,500 00

Second Year of Operation

Return on Property (8%)	$7,520,000 00
Deficiency from First Year of Operation	3,545,500 00
Return on Deficiency from First Year of Operation (8%)	283,640 00
Return on N. B. Expenditures of First Year, viz., 8% on $2,880,000	230,400 00
Return on N. B. Expenditures of current year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$12,129,840 00
Net Income from Sales of Gas (23-5/6 cents per M cu. ft. on 9,600,000 M cu. ft.)	2,288,000 00
Deficiency at End of Second Year	$9,841,840 00

Third Year of Operation

Return on Property (8%)	$7,520,000 00
Deficiency at End of Second Year of Operation	9,841,800 00
Return on Deficiency from Previous Years (8%)	787,347 00
Return on N. B. Expenditures during First Two Years, viz., 8% on $5,280,000	422,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$19,121,887 00
Net Income from Sales of Gas (31-1/3 cents per M cu. ft. on 14,400,000 M cu. ft.)	4,512,000 00
Deficiency at End of Third Year	$14,609,887 00

[fol. 2449] Fourth Year of Operation

Return on Property (8%)	$7,520,000 00
Deficiency at End of Third Year	14,609,887 00
Return on Deficiency from Previous Years (8%)	1,168,791 00
Return on N. B. Expenditures during First Three Years, viz., 8% on $7,680,000	614,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$24,463,378 00
Net Income from Sales of Gas (31-1/3 cents per M cu. ft. on 19,200,000 M cu. ft.)	6,016,000 00
Deficiency at End of Fourth Year	$18,447,378 00

Fifth Year of Operation

Return on Property (8%)	$7,520,000 00
Deficiency at End of Fourth Year	18,447,378 00
Return on Deficiency from Previous Years (8%)	1,475,790 00
Return on N. B. Expenditures during First Four Years, viz., 8% on $10,080,000	806,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$28,799,868 00
Net Income from Sales of Gas (31-1/3 cents per M cu. ft. on 24,000,000 M cu. ft.)	7,520,000 00
Deficiency at End of Fifth Year	$21,279,868 00

New Business Expenditures applicable to Capital during the above 5-year period	12,480,000 00
Amount of Investment in Replacing Present Volume of Gas Sales, on above basis	$33,759,868 00

In each of the foregoing computations, I have assumed the obtaining of business under 1923 conditions as to the familiarity of the public with the desirability and economy of the use of gas for the various purposes for which it is currently used.

[fol. 2450] If it were to be assumed that pro rata expenditures for canvassing, soliciting, demonstrating, obtaining the signing of applications, etc., would not of necessity be incurred for all of the consumers representing the company's present volume of sales, but that a substantial number of such consumers would voluntarily apply for gas service as soon as it was available, the above computations indicate an aggregate cost out of which full allowance could be made for such an assumption and my minimum figure of $25,000,000 still be exceeded.

Replacement Cost of Present Volume of Business (Group One) and Certain of the Advantages Enumerated in Group Two, on Basis of Present Value of Property and of Construction of Capacity Progressively in Four Units (Each of 25% of Total Capacity)

If it should be suggested that in the illustrative computations on pages XLIII to XLVIII and in the underlying assumptions which are set out on pages XLIII and XLIV, I have not adopted the most conservative basis possible (viz., an assumption that not all of the plant and distributing system need or would be completed for the first year of operation), I may add that I have made further computations which indicate, to my mind, that, even on what seems to me an ultra-conservative basis, of "piecemeal construction," the replacement cost of the enumerated elements of "going value" would substantially exceed my minimum figure of $25,000,000.

The following computations are in form and general plan similar to those already given on pages XLIII to

XLVIII. The assumptions underlying them are, with a [fol. 2451] single exception, the same as those which I have set out on pages XLIII and XLIV, and are supported by the same data and experience. The variant factor is that, in the following computations, I have assumed instead that only one-fourth of the total construction (i. e., plant and distributing system), will be completed and placed in use for the first year of operation and that three-fourths of the capacity to be constructed will be initiated so that one-fourth thereof will be completed and placed in operation in each succeeding year.

On this conservative assumption, a return upon no more than $70,000,000 out of the total property value of $190,000,000 will be required during the first year of the company's operations, and $40,000,000 more of constructed capacity will be progressively added in each year, until the total of $190,000,000 comes into use at the end of the third year of operations (the end of the fifth year from the beginning of construction). The full amount of property is therefore in use for the sixth year from the beginning of construction—the fourth year of operations.

In all other respects, the following computations are on the same basis as those on pages XLIII to XLVIII, the result of the foregoing conservative assumptions being as follows:

Basis of Present Value of Physical Property

First Year of Operation

Return on Property—8% on $70,000,000	$5,600,000 00
Return on Capital Expenditures for New Business (N. B.) viz., on $2,880,000 for period of 6 months (½ of 8%)	115,200 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$6,169,500 00
Net Income from sales of gas (48-1/3 cents per M cu. ft. on 4,800,000 M cu. ft.)	2,320,000 00
Deficiency at end of First Year	$3,849,500 00

[fol. 2452] Second Year of Operation

Return on Property—8% on $110,000,000	$8,800,000 00
Deficiency from First Year of Operation	3,849,500 00
Return on Deficiency from First Year of Operation (8%)	307,960 00
Return on N. B. Expenditures for First Year, viz., 8% on $2,880,000	230,400 00
Return on N. B. Expenditures for current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$13,738,160 00
Net Income from Sales of Gas (55-5/6 cents per M cu. ft. on 9,600,000 M cu. ft.)	5,360,000 00
Deficiency at End of Second Year	$8,378,160 00

Third Year of Operation

Return on Property—8% on $150,000,000	$12,000,000 00
Deficiency at end of Second Year of Operation	8,378,160 00
Return on Deficiency from Previous Years (8%)	670,253 00
Return on N. B. Expenditures of First Two Years, viz., 8% on $5,280,000	422,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$22,021,113 00
Net Income from Sales of Gas (31-1/3 cents per M. cu. ft. on 14,400,000 M. cu. ft.)	9,120,000 00
Deficiency at End of Third Year	$12,901,113 00

Fourth Year of Operation

Return on Property—8% on $190,000,000	$15,200,000 00
Deficiency at end of Third Year	12,901,113 00
Return on Deficiency from Previous Years (8%)	1,032,089 00
Return on N. B. Expenditures during First Three Years, viz., 8% on $7,680,000	614,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$30,297,902 00
Net Income from Sales of Gas (63-1/3 cents per M cu. ft. on 19,200,000 M cu. ft.)	12,160,000 00
Deficiency at End of Fourth Year	$18,137,902 00

[fol. 2453] Fifth Year of Operation

Return on Property—8% on $190,000,000	$15,200,000 00
Deficiency at end of Third Year	18,137,902 00
Return on Deficiency from Previous Years (8%)	1,451,032 00
Return on N. B. Expenditures during First Four Years, viz., 8% on $10,080 00	806,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$36,145,634 00
Net Income from Sales of Gas (63-1/3 cents per M cu. ft. on 24,000,000 M cu. ft.)	15,200,000 00
Deficiency at End of Fifth Year	$20,945,634 00

New Business Expenditures applicable to capital during the above 5-year period	12,480,000 00
Amount of Investment in Replacing Present Volume of Gas Sales on Above Basis	$33,425,634 00

Basis of Actual Investment in Physical Property

First Year of Operation

Return on Property—8% on $34,000,000	$2,720,000 00
Return on Capital Expenditures for New Business (N. B.) viz., on $2,880,000 for period of 6 months (½ of 8%)	115,200 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$3,289,500 00
Net Income from Sales of Gas (16-1/3 cents per M cu. ft. on 4,800,000 M cu. ft.)	784,000 00
Defficiency at End of First Year	$2,505,500 00

Second Year of Operation

Return on Property—$54,000,000 at 8%	$4,320,000 00
Deficiency from First Year of Operation	2,505,500 00
Return on Deficiency from First Year of Operation (8%)	200,440 00
Return on N. B. Expenditures for First Year, viz., 8% on $2,880,000	230,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$7,806,640 00

Net Income from Sales of Gas (23-5/6 cents per M cu. ft. on 9,600,000 M cu. ft.)	2,288,000 00
Deficiency at End of Second Year	$5,518,640 00

[fol. 2454] Third Year of Operation

Return on Property—$74,000,000 at 8%	$5,920,000 00
Deficiency at end of Second Year of Operation	5,518,640 00
Return on Deficiency from Previous Years (8%)	441,491 00
Return on N. B. Expenditures of First Two Years, viz., 8% on $5,280,000	422,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$12,852,831 00
Net Income from Sales of Gas (31-1/3 cents per M cu. ft. on 14,400,000 M cu. ft.)	4,512,000 00
Deficiency at End of Third Year	$8,340,831 00

Fourth Year of Operation

Return on Property—$94,000,000 at 8%	$7,520,000 00
Deficiency at end of Third Year	8,340,831 00
Return on Deficiency from Previous Years (8%)	667,266 00
Return on N. B. Expenditures during First Three Years, viz., 8% on $7,680,000	614,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$17,692,797 00

Net Income from Sales of Gas (31-1/3 cents per M cu. ft. on 19,200,000 M cu. ft.	6,016,000 00
Deficiency at End of Fourth Year	$11,676,797 00

[fol. 2455] Fifth Year of Operation

Return on Property—$94,000,000 at 8%	$7,520,000 00
Deficiency at end of Fourth Year	11,676,797 00
Return on Deficiency from Previous Years (8%)	934,143 00
Return on N. B. Expenditures during First Four Years, viz., 8% on $10,080,000	806,400 00
Return on N. B. Expenditures of Current Year, viz., on $2,400,000 for period of 6 months (½ of 8%)	96,000 00
Installation of 110,000 meters at $4.13 each	454,300 00
Total Revenue Required (aside from C.)	$21,487,640 00
Net Income from Sales of Gas (31-1/3 cents per M cu. ft. on 24,000,000 M cu. ft.)	7,520,000 00
Deficiency at End of Fifth Year	$13,967,640 00
N. B.—Expenditures applicable to Capital during the above 5-year period	12,480,000 00
Amount of Investment in Replacing Present Volume of Gas Sales on Above Basis	$26,447,640 00

Three Additional Elements Not Comprised Within My $25,000,000 Minimum

There are at least three elements and advantages, the possession of which is sometimes included within "going value" but which I have not taken into account in reaching my $25,000,000 minimum:

1. The possession of assembled capital. One of the elements and advantages commonly taken into account in estimating "going value" is the cost and present worth of the possession of sufficient capital to finance the enterprise.

To secure this advantage for the company has in fact cost a great deal of money; to replace this advantage would, in my opinion, as of June 1, 1923, have cost even more money, measured in present-day dollars.

[fol. 2456] Nevertheless, I have not included in my estimate this cost of financing. In connection with his undistributed structural costs, in his exhibits in this case (See Exhibits Nos. 856 and 866), Colonel A. S. Miller has computed the cost of financing, for the obtaining of the amount of capital necessary for all the construction projects involved in reproducing the property used in serving the consumers of the Consolidated Gas Company.

Colonel Miller estimates this cost of financing at about five per cent. on the aggregate capital required. That seems to me a reasonable percentage, and I agree with the resultant figure of $9,000,000 for the cost of financing for all of the construction projects involving property used in the gas business of the Consolidated Gas Company (Miller's Exhibits Nos. 856 and 866X).

In my opinion, this estimate by Colonel Miller fairly represents the replacement cost and present worth of the possession of the assembled capital for this great enterprise.

In my opinion, this element of value should be included and allowed, either as a specific part of Colonel Miller's undistributed costs or as a part of "going value." I have not included it here because I think it preferably belongs in the other relationship.

If, however, as apparently has been done in the New York and Queens Gas Company case and in The Bronx Gas and Electric Company case, this reasonable cost of financing is not computed and allowed as a part of Colonel Miller's undistributed costs, then clearly, in my opinion, it should be included and allowed as a part of "going value," which [fol. 2457] would add $9,000,000 to my present minimum figure.

2. The possession of resources of defense of the right of the Company to earn a fair return upon the value of its property. When a new public utility enterprise is started,

under conditions of actual rate regulation by Commission and at least potential regulation by special legislative Act, the Company is not in a strong position to defend itself against rate reductions which involve confiscation.

When it begins business, the amount and value of the Company's property has not, ordinarily, been ascertaind and passed upon by any judicial tribunal; it has not developed an organization or experience in the ready formulation and presentation of the necessary engineering and accounting exhibits; it has not obtained fact-finding determinations which constitute at least some measure of protection.

That is not true of the Consolidated Gas Company, in 1923 or at the present time, and the attaining of the present position of advantage in this respect has cost the company more than $1,000,000 and undoubtedly at least twice that sum.

Detailed inventories and engineering records of all of its properties have been prepared by qualified engineers and carefully checked and verified. This alone has cost the company hundreds of thousands of dollars. These inventories and records are continued and brought to date when need for their use arises. Their possession is a great advantage in defense of the company's right to fair earnings, and also saves the company hundreds of thousands of dollars. [fol. 2458] The most detailed schedules, studies and summaries have been made, at a cost of tens of thousands of dollars, showing the company's actual investment in its various properties, by stations and years, from 1884 to the present time. Once prepared, these statements are continued and are available for use at any time.

Statistical analyses, maps and diagrams and photographs of company properties, accounting data, engineering studies, and the like, have been prepared, at a cost of tens of thousands of dollars. Their possession is invaluable in defense, and also saves a larger expenditure which otherwise would be necessary in rate litigation.

Nor is the worth of these advantages reflected only in the possession of these inventories, records, studies, and other data, and in the developed organization and experience. Out of the litigation, conducted at so great cost, in the Courts and before the Commission, have come determina-

tions of matters of fact, as to the company's operations, amount of property, usefulness of property, investment in property, value of property, allocations of expenses, course of business, purchasing methods, accounting routines, etc.

Without raising at all the legal question whether these findings of the Courts and the Commission are binding upon anyone, I may at least say that the company regards these findings and determinations as constituting a great help and advantage, in protecting the earnings of the company from unfair attacks. Such determinations are deemed to at least carry some practical weight and force; the litigation which led to them cost the company a great deal of money; their possession is deemed by the company an important part of its resources of defense against unfair reg-
[fol. 2459] ulation—an important and considerable advantage over a gas company just starting business.

The actual cost of this element to the Consolidated Gas Company, far exceeding $1,000,000 has never been capitalized by the Company. These expenditures have never yet been included by the Public Service Commission as an item of the Company's operating expenses on the basis of which its rates have been fixed, although the company has contended, and I believe, that they should be so included and allowed.

Here is an element and advantage which has been created solely at the expense of the company's investors and stockholders. It constitutes an important and large advantage, over a company just beginning to operate. To acquire and possess this advtantage has cost this company more than $1,000,000. Its present worth to the company, as an asset and resource in the protection of $200,000,000 of property, I would personally appraise at several times $1,000,000.

3. The possession of the right to use various devices, machinery, etc., which have produced the substantial economies hitherto realized. This advantage is, I think, preferably treated through a capitalization of the value of rights under patents. Such an element and advantage actually exists, to a large extent, in the case of the Consolidated Gas Company. I have not had the time to compute or estimate its extent, cost and present worth, and have not included it in my minimum figure.

[fol. 2460] In Conclusion

The computations set out on pages XLII to LIV hereinbefore are illustrative and demonstrative. They relate to the worth and cost of the present volume of business of the Consolidated Gas Company. They indicate that these items of obtaining, attaching and developing the business represent alone a "going value" in excess of $25,000,000.

These various computations as to indicated elements do not undertake to deal with the replacement cost or worth of all of the elements and advantages entering into "going value." The second group of elements enumerated by me (page XXXIX) has not been completely covered in these specific computations.

I realize, of course, that a determination as to the "going value" of the Consolidated Gas Company must be the result of opinion and judgment drawn from such facts and conditions as would be influential, in varying degrees, upon the minds of different persons under varying circumstances. For my own part, my judgment is that all of the foregoing facts and computations confirm and corroborate the minimum figure of $25,000,000 which I have given for "going value" as to the Consolidated Gas Company.

I wish to add that I have not attempted to rely upon my own accuracy in computations or in comparisons with the indicated sources of statistical information. Both in this "study" and in the "detail sheets" (Exhibit No. 893), I have had all schedules, computations, and data shown as taken from the Company's books checked and verified by Mr. Herbert C. Davidson, Assistant Secretary of the Consolidated Gas Company.

Walter R. Addicks.

[fol. 2461] New York, June 16, 1924.

Met pursuant to adjournment.

Herbert W. Alrich, a witness in behalf of the plaintiff, recalled.

Direct examination by Mr. Ransom:

I am familiar with a method of engineering computation known as the Alvord method. I have from time to time studied the so-called Alvord method. That is a

method of computation of certain elements of going value. It is well identified by name. The Alvord method has received extensive consideration by courts and commissions and is commonly spoken of as the Alvord method. It is a process of comparing an existent plant with a hypothetical plant.

I have prepared a computation according to the Alvord method, which is produced and identified by me.

(Computation marked Plaintiff's Exhibit No. 894 for identification.)

Mr. Alvord is the senior member of the engineering firm of Alvord, Burdick & Howson of Chicago. They are well-known engineers, specializing in water works, construction and sanitary engineering. This Alvord method is one which has been commonly used by engineers or has often been used by engineers in computing going value, with respect to the various types of public utilities. It was originally promulgated in reports to any engineering [fol. 2462] society, and it has been discussed twice at great length in the American Society of Civil Engineers meeting in 1909 and later in 1911.

In preparing this computation according to the Alvord method, I have not assumed the correctness or incorrectness or the soundness or unsoundness of the Alvord method; I have acted as a computer. I was asked to make the computation according to the Alvord method, and this is the computation. The Alvord method is to compute the going value of an existing utility, the reproduction cost of which, without going value, has been ascertained, and assuming an investor who desires to acquire the created income of that existing utility and who has before him the choice of either paying the reproduction cost plus the going value in order to obtain that created income or procuring funds and proceeding to build a corresponding plant and develop that income through whatever period of years it will take. Mr. Alvord's method assumes it is done non-competitively and that the community in which the enterprise is launched is so prepared to immediately make use of these facilities furnished by the utility that no exploitation expenses will be incurred or necessary.

The method further assumes that the investor proceeds to acquire the funds, organizes his company and builds the plant gradually over a period of years, connecting the business and acquiring a gradually increasing income which eventually reaches the level of that of the existent plant; then the present worth of the excess of the earnings [fol. 2463] of the existent plant in each year throughout the development period over the earnings of the developing plant or comparative plant is the going value.

In this application of the Alvord method, I took the figures in respect of value of property from the exhibits in this case, and took my figures in respect to operating costs also from the exhibits in this case. In other words, I have taken what is known as the Alvord method and applied it to the figures in exhibits in this case. In respect of values of property, I pointed off the figures in dollars and cents, and used nothing under $1,000.

The assumptions and mathematical or engineering computations which constitute the Alvord method are that the expense for organization, that is $8,700,000. has been made on June 1, 1923, and that part of the investment has been made, and that sometime between June 1, 1923 and June 1, 1924, one-half of the real estate is bought, and during that same year that one-quarter of the plant is erected, and one-quarter of the mains, distributions mains. It is assumed that the funds then available and being employed in construction during that year receive monthly bank interest of 2 per cent on the monthly balances credited to the enterprise. The next year from June 1, 1924, to June 1, 1925, the other half of the real estate is purchased, an additional quarter of the plant is constructed, an additional quarter of the mains, one-half of the services are installed, one-half of the meters are installed, one-half of [fol. 2464] the appliances, and one-half of the general equipment is purchased, and that again the enterprise is credited with the bank interest on the monthly balances, which is taken as the total amount of the average for six months. It is assumed on the 1st of June, 1925, that the company began to distribute gas with one-half of the meters and that each consumer—it is assumed that during this first year of operations there have been installed one-half of the total number of meters and that the gas per

meter is one-half of the ultimate, or 21,850 cubic feet. The following year it is assumed that the third quarter of the plant is constructed, all of the land having been purchased, the third quarter of the mains are installed, one-quarter of the services, one-quarter of the meters, one-quarter of the appliances, and that 25 per cent of the expenditures for general equipment are made. It is assumed that an additional quarter of the meters are installed during that year, that the company now has installed 75 per cent of the meters, that the gas per meter is now 75 per cent of the ultimate, or 32,775 cubic feet.

The following year the plant is completed, the mains, services, meters, appliances and general equipment are all installed and expenditures made. But in that year they reach the total number of meters, or 550,000, which I have taken as a round figure, but they have only reached 85 per cent of the gas per meter, and the following year they reach the ultimate figure of 43,700 cubic feet per meter, and reach the level of the existent plant in income. Then [fol. 2465] for each one of the years I have taken during the non-earning period the accruing bank interest and discounted it back to June 1, 1923, and deducted it from the earning, the created income of the existent plant, and followed that procedure through, taking up the operating revenue of the hypothetical plant as soon as there is any, and discounting all of that income back to June 1, 1923, which results in a total figure which is the present worth or going value by that method. Now, that does not include anything for exploitation of the business, because Mr. Alvord's method expressly excludes that.

By the Master:

That would imply a method which covers a period of six years; it is the method for any time, and it does not make any difference when the six years were or what six years I take. Alvord took a six year period.

By Mr. Ransom:

As to the fundamental principles of the Alvord method, I do not in any way certify or testify to the correctness of any of these assumptions. I acted there only as a

computer. I have made an engineering computation according to the method.

I have made a correct computation according to the engineering computation known as the Alvord method, assuming the correctness of the method and the figures which I have taken from the exhibits in this case as my bases.

(Plaintiff's Exhibit No. 894 for identification offered in evidence but not received, to which ruling plaintiff excepts.)

[fol. 2466] New York, June 23, 1924.

Met pursuant to adjournment.

FRANK H. NICKERSON, a witness in behalf of the plaintiff, resumed the stand.

Direct examination (continued) by Mr. Ransom:

I have prepared a computation from exhibits which are in evidence, which show the rate of return actually earned during the year 1923, based upon operating results as shown in Exhibit 888, with revenues for the quantity of gas sold calculated at the dollar rate, figured in the first instance upon investment in all property, as per my Schedule A of Exhibit 888, exclusive of going value, and have personally made a similar computation, already in evidence, upon the basis of present replacement costs as per my Schedule B of Exhibit 888, exclusive of going value. It is true and correct as a computation based upon the exhibits indicated.

These investment cost figures which I have used in this computation are the same investment cost figures that are in Mr. Brundage's exhibits. I simply brought them together in a summary sheet which is Schedule A of Exhibit 888. With respect to the replacement cost figures those are the figures that were shown by Colonel Miller and the others who testified to replacement costs and I simply brought them together in a summary schedule B of Plaintiff's Exhibit No. 888. The underlying operating cost used in this schedule is the same as that shown by

Mr. Teele, except that I have eliminated the item of interest on others' property used in the Consolidated service.

(Received in evidence and marked Plaintiff's Exhibit No. 895, which reads as follows:)

PLAINTIFF'S EXHIBIT 895

Consolidated Gas Company of New York

[fol. 2467] Statement showing the rate of return that would have been realized during the year 1923 if the $1.00 rate had been in effect during the year, based upon the operating results shown in Exhibit No. 888 and upon the investment in all property devoted to use of Consolidated Gas Company consumers, exclusive of going value (per schedule A, of Nickerson Exhibit No. 888).

		Amount	Per M c. f. sold
Net Cost of Production & Distribution, etc., (Exhibit No. 888)		20,407,474.11	$.8483
Revenue from sale of gas at the $1.00 rate:			
General Consumers 23,927,305,500 c. f. at $1.00 per M c. f.	$23,927,305.50		
N. Y. City 130,388,700 c. f. at 75¢ per M c. f.	97,791.53		
		24,025,097.03	.9986
Net earnings at the $1.00 rate (a)		3,617,622.92	.1503

Equal to a return on Investment in all property devoted to use of Consolidated Gas Company Consumers, exclusive of Going Value (a total investment of $95,724,288.13) of 3.78%.

(a) Equivalent to a Return at 8% per annum on Investment (exclusive of Going Value) of only	$45,220,286.50
Leaving an investment (exclusive of Going Value) upon which nothing was earned of	50,503,941.63
Total	$95,724,228 13

On the basis of Present Replacement Cost (per Schedule "B" of Exhibit No. 888) Exclusive of Going Value, the resultant figures would have been:

Net Cost of Production and Distribution, etc. (Exhibit No. 888.)		$20,407,474.11	$.8483
Revenue from Sales of Gas at the $1.00 Rate:			
General Consumers 23,927,305,500 c. f. at $1.00 per M c. f.	$23,927,305.50		
[fol. 2468] N. Y. City 130,388,700 c. f. at $.75 per M c. f.	97,791.53		
		24,025,097.03	.9986
Net earnings at the $1.00 Rate (a)		3,617,622.92	.1503

Equal to a Return on Present Replacement Cost of all Property devoted to use of Consolidated Gas Company Consumers, exclusive of Going Value (a total Replacement Cost of $184,711,006.51) of 1.96%.

(a) Equivalent to a Return of 8% per annum on Present Replacement Cost (Exclusive of (Going Value) of only	$45,220,286.50
Leaving Replacement Cost (exclusive of Going Value) upon which nothing was earned of	139,490,720 01
Total	$184,711,006.51

I have prepared a similar schedule for the year 1923 on exactly the same basis, except including as an illustrative computation the sum of $25,000,000 for going value. This is only to illustrate such allowance and that is a figure which I have taken from Mr. Addicks' testimony in this case.

(Received in evidence and marked Plaintiff's Exhibit No. 896 which reads as follows:)

PLAINTIFF'S EXHIBIT No. 896

Consolidated Gas Company of New York

Statement showing the rate of return that would have been realized during the year 1923 if the $1.00 rate had been in effect during the year, based upon operating results shown in Exhibit No. 888 and upon the investment in all property devoted to use of Consolidated Gas Company Consumers (Schedule "A" of Exhibit No. 888) plus $25,000,000 for going value.

		Amount	Per M c. f. sold
Net Cost of Production and Distribution, etc. (Exhibit No. 888)		$20,407,474 41	$ 8483
[fol. 2469] Revenue from Sales of Gas at the $1.00 Rate:			
General Consumers 23,927,305,500 c. f. at $1.00 per M c. f.	$23,927,305 50		
N.Y.City 130,388,700 c. f. at $.75 per M c. f.	97,791 53		
		24,025,097 03	9986
Net Earnings at the $1.00 Rate (a)		$3,617,622 92	1503

Equal to a return upon Investment in all Property devoted to use of Consolidated Gas Company Consumers including $25,000,000 for Going Value (a total Investment of $120,724,228.13) of 3.00%.

(a) Equivalent to a Return at 8% upon upon an Investment (including Going Value) of only	$45,220,286 50
Leaving an Investment (including Going Value) upon which nothing was earned of	75,503,941 63
Total	$120,724,228 13

On the Basis of Present Replacement Cost (Schedule "B" of Exhibit No. 888) plus $25,000,000 for Going Value, the resultant figures would have been:

Net Cost of Production and Distribution, etc. (Exhibit No. 888)		$20,407,474 11	$ 8483
Revenue from Sales of Gas at the $1.00 Rate:			
General Consumers 23,927,305,500 c. f. at $1.00 per M c. f.	$23,927,305 50		
N.Y.City 130,388,700 c. f. at $.75 per M c. f.	97,791 53		
		24,025,097 03	9986
Net Earnings at the $1.00 Rate (a)		$3,617,622 92	1503

Equal to a Return upon the Present Replacement Cost of all Property devoted to use of Consolidated Gas Company Consumers, including $25,000,000 for Going Value (a [fol. 2470] total Replacement Cost of $209,711,006.51) of 1.73%.

(a) Equivalent to a Return at 8% upon Replacement cost (including Going Value of only	$45,220,286 50
Leaving Replacement Cost (including Going Value) upon which nothing was earned of	164,490,720 01
Total	$209,711,006 51

I have prepared similar computations for the year 1922, based upon Schedule A and B of my Exhibit 889 and these are made up in the same way and are offered simply as computations. These are for the year 1922. What I have done here is to compute the quantity actually sold at the $1 rate in respect to general consumers, and 75 cents with respect to New York City. I took the operating expenses as shown by my exhibit and by the Teele Exhibit.

(These schedules received in evidence and marked Plaintiff's Exhibits 897 and 898.)

PLAINTIFF'S EXHIBIT No. 897

Consolidated Gas Company of New York

Statement showing the rate of return that would have been realized during the year 1922 if the $1.00 rate had been in effect during the year, based upon the operating results shown in Exhibit No. 889 and upon the investment in all property devoted to use of Consolidated Gas Company consumers, exclusive of going value (per Schedule "A" of Nickerson Exhibit No. 899)

		Amount	Per M c. f. sold
Net Cost of Production and Distribution, etc. (Exhibit No. 889)		$19,433,116 30	$ 9443
Revenue from sales of Gas at the $1.00 Rate:			
General Consumers 20,462,683,900 c. f. at $1.00 per M c. f.	$20,462,683 90		
New York City 117,601,700 c. f. at $.75 per M c. f.	88,201 28		
		20,550,885 18	9986
Net Earnings at the $1.00 Rate (a)		1,117,768 88	0543

[fol. 2471] Equal to a Return on Investment in all property devoted to use of Consolidated Gas Company Consumers Exclusive of Going Value, (a total investment of $92,949,668.80) of only 1.20%.

(a) Equivalent to a Return at 8% per annum on an Investment (exclusive of Going Value) of only	$13,972,111 00
Leaving an Investment (Exclusive of Going Value) upon which nothing was earned of	78,977,557 80
Total	$92,949,668 80

On the Basis of Present Replacement Cost (per Schedule "B" of Exhibit No. 889) Exclusive of Going Value, the resultant figures would have been:

Net Cost of Production and Distribution, etc. (Exhibit No. 889)		$19,433,116.30	$9443
Revenue from sales of gas at the $1.00 Rate:			
General Consumers 20,462,683,900 c. f. at $1.00 per M c. f.	$20,462,683.90		
N. Y. City 117,601,700 c. f. at $.75 per M c. f.	88,201.28		
		20,550,885.18	.9986
Net Earnings at the $1.00 Rate (a)		1,117,768.88	.0543

Equal to a Return on Present Replacement Cost of all property devoted to use of Consolidated Gas Company Consumers exclusive of Going Value (a total Replacement Cost of $191,882,680.95) of only 0.59%.

(a) Equivalent to a Return at 8% per annum on Present Replacement Cost (exclusive of Going Value) of only	$13,972,111.00
Leaving Replacement Cost (exclusive of Going Value) upon which nothing was earned of	177,910,369.05
Total	191,882,680.05

[fol. 2472] PLAINTIFF'S EXHIBIT No. 898

Consolidated Gas Company of New York

Statement showing the rate of return that would have been realized during the year 1922 if the $1.00 rate had been in effect during the year, based upon the operating results shown in Exhibit No. 889 and upon the investment in all property devoted to use of Consolidated Gas Company consumers (per schedule "A" of Nickerson Exhibit No. 889) plus $25,000,000 for going value.

		Amount	Per M c. f. sold
Net Cost of Production and Distribution, etc. (Exhibit No. 889)		$19,433,116.30	$ .9443
Revenue from sales of gas at the $1.00 Rate:			
General Consumers 20,462,683,900 c. f. at $1.00 per M c. f.	$20,462,683.90		
N. Y. City 117,601,700 c. f. at $.75 per M c. f.	88,201.28		
		20,550,885.18	.9986
Net Earnings at the $1.00 Rate (a)		1,117,768.88	.0543

Equal to a return on Investment in all property devoted to use of Consolidated Gas Company Consumers including $25,000,000 for going value (a total investment of $117,949,668.80) of only 0.95%

(a) Equivalent to a return at 8% per annum on an investment (including going value) of only	$13,972,111.00
Leaving an investment (including going value) upon which nothing was earned of	103,977,557.80
Total	$117,949,668.80

On the Basis of Present Replacement Cost per Schedule "B" of Exhibit No. 889) plus $25,000,000 for Going Value, the resultant figures would have been:

Net Cost of Production and Distribution etc. (Exhibit No. 889)		$19,433,116.30	$.9986
Revenue from sales of gas at [fol. 2473] the $1.00 Rate:			
General Consumers 20,462,683,900 c. f. at $1.00 per M c. f.	$20,462,683.90		
N. Y. City 117,601,700 c. f. at $.75 per M c. f.	88,201.28		
		20,550,885.18	.9986
Net earnings at the $1.00 Rate (a)		1,117,768.88	.0543

Equal to a Return upon the Present Replacement Cost of all property devoted to use of Consolidated Gas Company Consumers including $25,000,000, for Going Value (a total Replacement Cost of $216,882,680.05) 0.52%.

(a) Equivalent to a return at 8% per annum on Present Replacement Cost (including Going Value) of only	$13,972,111.00
Leaving Replacement Cost (including Going Value) upon which nothing was earned of	202,910,569.06
Total	$216,882,680.05

(There were received in evidence vouchers evidencing payments for gas purchased during the year 1922 rendered by The Astoria Light, Heat and Power Company, New Amsterdam Gas Company, The Standard Gas Light Company and New York Mutual Gas Light Company; payments for gas purchased during the year 1923, rendered by The Astoria Light, Heat and Power Company, New Amsterdam Gas Company and The Standard Gas Light Company; payments for the use of facilities during the year 1923, ren-

dered by The Astoria Light, Heat and Power Company for manufacturing plants, New York Mutual Gas Light Company for manufacturing plant, East River Gas Company of Long Island City for 48 inch main and 60 inch mains and tunnels, and The Standard Gas Light Company for 62nd [fol. 2474] Street governor and boiler house, and payments for the use of facilities during the year 1923 rendered by The Astoria Light, Heat and Power Company for manufacturing plant, East River Gas Company of Long Island City for 48 inch and 60 inch mains and tunnels, and The Standard Gas Light Company for the Harlem River main and the 62 Street governor and boiler house.)

I stated that I had prepared a statement which showed the quantities and cost of materials and labor employed in the manufacture of water gas purchased from the New Amsterdam Company during the year 1923. This is such a statement. That indicated the months in which such gas was purchased and I have the same thing with respect to water gas purchased from the Standard Company. This was prepared from the bills which have just been received in evidence. I personally checked it to the books of the Standard and New Amsterdam Gas Companies. This separately shows those costs as to the New Amsterdam and Standard Companies which I have combined and put in Exhibit 888 and also reconciles the total with the figures shown in the Teele exhibits for 1923, to the extent [fol. 2475] of cubic feet, total amount in dollars, and the rate per thousand cubic feet average for the year.

(Marked Plaintiff's Exhibit No. 899 for Identification.)

I have the same thing with respect to the year 1922, except that there is involved also the Mutual Company, and that is prepared in the same way and shows the same detail.

(Marked Plaintiff's Exhibit No. 900 for Identification, copies to the Defendant.)

With respect to this statement for 1922 Exhibit No. 900 for Identification, I prepared that from the bills which have been put in evidence. I checked it myself personally to the books of the Standard, New Amsterdam and New York Mutual Gas Companies. It is true and correct and

gives the details separating as between the companies the cost of water gas purchased from the Standard and New Amsterdam and Mutual plants.

By the Master:

"The first Exhibit for Iden. No. 899 states: Gas Purchased During Months of February, March, June, September and October." Those were the only months in which we purchased gas from that company. On the following page: "Gas Purchased during months of April, May, June and October," were the only months in that year in which we purchased from that company.

[fol. 2476] George E. Woods, a witness on behalf of the plaintiff, resumed the stand:

Cross-examination by Mr. Donnelly:

In making up my estimate of going value I assumed that the manufacturing plants and distribution system of the Consolidated Gas Company were located where the company's plants, including Astoria, now are situated. And also the population of the territory served by the company to be what it was as to numbers and as to character as of June 1, 1923.

On my direct examination I testified that the prospective consumers have already been users of gas to the extent that they were educated as of June 1st, 1923. Certainly, not all of them had been fully educated in the extent of the use of gas. In other words, we are developing our business every day. Probably most of the people in New York City on June 1st, 1923, were familiar with the use of gas to an extent, unless they should have happened to have been immigrants that landed within a month or two prior to that time. We are rather constantly finding new uses for gas and also finding new methods or appliances by which its use may be had.

As to whether gas is being used in any of the new apartment houses going up in the plaintiff's territory for heating the apartments themselves I do not know if there are any just like that. Of course, there are many that

heat their apartments in winter time, that is, by means of heating appliances in apartments. I do not know of any apartment just at this time that is laid out to be heated by gas alone. I am familiar with those two gas boilers [fol. 2477] or furnaces, in the basement of the garage of the Bronx Gas and Electric Company, which heat the building itself—heat the garage and also heat the office. To just what extent that use of gas is being made by new apartments or dwellings that are going up in plaintiff's territory, I do not know. There are a number of business places, and so forth, that are using the Bryant type of boiler for heating purposes. I have put the use of that boiler in to the extent that it was in as of June 1st, 1923. That was, quite a number. I do not know who manufactures that kind of heating appliance, the Bryant boiler. I am not sure whether it is manufactured by Bryant or not. It is called the Bryant boiler. The Consolidated Gas Company will handle boilers of that type and try and put it in whenever they can. Wherever it is possible for them to improve their business by the putting in of fuel appliances, they will do so, if they are of a proper type. It is a fact that people living in the plaintiff's territory can secure gas from no other gas company than the Consolidated Gas Company or one of the Consolidated affiliated gas companies. On my direct examination I testified there would be necessary canvassing, accounting, demonstrating, experimenting with appliances, storing and displaying appliances, advertising and setting of meters and appliances, the cost of none of which has been included in the inventories and appraisals in evidence in this action. The cost of each of the items which I just recited is charged by the company as part of its operating expenses.

There would be demonstrating and canvassing, that is, canvassing not only for the meters but for the different [fol. 2478] type of appliances to be used in connection with the gas service. In other words, it might not require a great amount of canvassing to have a meter attached, but it might require a considerable amount of canvassing to have appliances installed for the use of gas. In other words, people might be very glad to have a meter as a matter of convenience, but it would require some canvassing and soliciting in order to get them to install appliances for gas consumption.

For every gas appliance which the Consolidated Gas Company either sells or rents, the sale or the rental of that appliance has not been brought about by the voluntary action of the consumers coming to our office and asking for one of them, but by the act of solicitation of one of our canvassers. I think that if we were compelled to canvass and advertise and solicit each individual one, that the cost would be very much higher than that indicated in my exhibit. In other words, there is a certain amount of the business that comes to the Consolidated Gas Company which comes to it as a result of the voluntary act on the part of the consumer.

I did not assume any number of employees would be engaged in the work of canvassing in making up my estimate, I assumed that they were to be paid, probably by salary or by salary plus commission which ever would be the better and quicker way to develope the business in a short period of time, in a period of three years. You would probably pay both sufficient salary to get a good man to do that work and commission. I only know that for the year 1923 it cost us a certain amount of money whereby we got a cer- [fol. 2479] tain amount of business. Our books show a certain amount paid as salaries to canvassers during 1923. And other things in the development of the business cost us so much money during the year 1923, from which we developed a certain amount of business. In the face of having a good personnel and a general trained force, it cost us so much money. I used that same figure as applied for the year 1923, which in the case of a new company, there would be an untrained force in getting appliances installed.

I think it could be found in the Consolidated Gas Company books that for the year 1923 a certain amount was segreated in such a way that one could tell by looking at the books what was paid as salaries and commissions to canvassers. The accounts are in such shape that the amount spent for canvassing commission is an item in the accounts of the company. The salary or compensation of a canvasser would be an operating expense account. I think in Promotion Expense. One of those items that I recited on my direct testimony was accounting. I made no assumption as to what the size of the accounting staff would be. A sufficient amount to take care of the business as far as it came

along. By accounting general in the order or keeping records and what would naturally apply in getting you business and setting your business, developing our business, the payment of your bills, and the general accounting that would apply to that particular thing. In other words, I mean the clerical staff that would be employed in keeping the accounts of the canvassers and the consumers, and so on and the paying of the bills, and if they purchased or [fol. 2480] rented ranges or appliances the accounts would have to be kept in connection with them. A sufficient salary was paid a good man to do the work. I made no assumption of any specific amount or specific number and I assumed the canvassers and members of the accounting staff would probably be employed for a longer period of time, but in my exhibit it was based—predicated upon a three-year period, at which time they would have developed a business of the same value that we had on June 1st, 1923.

In making up my estimate for going value, I took that period to be one of three years for the development of business and two years prior to that in the construction of a part of the plant for the taking on this business, five years altogether. In assuming the cost of demonstrating and experimenting with appliances that would include demonstrating the appliances in the office of the company or whatever they wanted to demonstate in order to develop this business. They would have to do a great deal more than they are doing at the present time in order to develop the business in such period of time. The appliances would probably have been experimented with before they went on. In other words, if we wanted to determine the right kinds and types of appliances to put on, then there would be experiments made on those appliances before they were sent out. It did include everything in connection with the promotion business, in order to develop the business, as of June 1, 1923; whatever might be required. As to the difference between display and demonstration of appliances, we might simply have display windows where we might show the various kinds and types that we have for sale. In [fol. 2481] demonstrating, you might have another place where you show this particular appliance is operated. One would be a display or show window, other than those that are displayed in the office, and the other would be the actual

demonstrating of what could be done with the particular kind of appliance and they would have a great many more places, under conditions of that kind, in order to develop the business within a period of three years. I did not assume any specific sum for the cost of that display of appliances. I do not know as the Consolidated Gas Company's books show in detail the cost of displaying. I think they have an account which indicates at least some or most of the display costs.

I did not attempt to make any distinction between the display and the demonstrating of appliances in the company's offices and showrooms except that I tell what a display and a demonstration would be. As to the amount, I made no detailed statement and have not endeavored to state to what extent it would go, but it would cost some money. In connection with that display of appliances we would have them outside of the offices, many places, in order to develop this business.

I do not recall at the present moment if the Consolidated Gas Company has any placed outside of its branch commercial offices where these appliances are displayed and demonstrated but if you were developing the business in a period of time you would have to expand beyond the expansion that they are having as of this time.

The nature of the advertising that is assumed by me in my estimate is advertising which would be such as to get the [fol. 2482] business. All kinds of newspaper advertising, that would be one of them. I suppose by circular and by billboards, and probably a periodical or something in connection with it. Whatever would be necessary. In the development of such a large business as this the advertising would be a very important factor. A magazine similar to the one published by the Consolidated Company and called Gas Logic would probably be used, and it is being used now to good advantage, and certainly after attaching the meter, as of the first day that the gas went on, the probabilities are that that consumer would not use the same amount of gas that he would as the result of the demonstration and advertising. In other words, it would come along. I would not undertake to make any specific assumption so far as a specific amount is concerned as to what part of my estimate is attributable to advertising. The books may show as of

a given period what it costs them to advertise appliances. It shows the full promotion expense; and as to advertising, I think they have newspaper advertising and Gas Logic and other items. The books show the cost of printing and publishing and circulating the Gas Logic.

The Consolidated Gas Company advertises the use of gas appliances on the bills which it send to its consumers. I think nearly all the time. I have seen many of them. I hope it is a fair statement that the gas business has come to the company as a result of advertising in the ways I indicated. That is part of the promotion expense. In other words, we are developing business right along, and the population of Manhattan Island is not growing any, but our business is developing.

[fol. 2483] I know about where the Dyckman tract is but I would not undertake to give generally its boundaries. It is up there west of the Speedway, I should say the upper part of Manhattan Island. That is a section which has developed very materially by the erection of new dwellings and stores within the past ten years. I have known it to happen in my experience that new sections of plaintiff's territory, like the Dyckman tract for illustration, have been opened up within the past ten or fifteen years, new dwellings and new stores constructed where none existed before, and that the occupants of such new dwellings and stores have petitioned for gas service and secured it without the intervention of any canvassing or soliciting upon the part of the plaintiff company. I can remember when we bought the College Point Gas Company, and they all petitioned for gas. That is, the New York and Queens Gas Company made a purchase of the College Point Company and the mains had not been extended throughout the entire territory, but they all made an application and asked for the extension of our mains of their own volition and that we did. In some cases we set the meters and some of them said they did not want a meter but thought they could get a better value for their property if they had gas on the street. The Consolidated Gas Company rents gas appliances to consumers within its territory, but, that is not the only company that sells these appliances. Gas appliances, in other words, are sold to the Company's consumers by manufacturers or their agents, by department stores and by

plumbers. But in the face of all that, it costs so much to [fol. 2484] develop the business as of the present time. I should say that the consumption of gas made by our company has been increased by the sales made by these manufacturers, department stores and plumbers, of gas appliances, sales made by people other than the plaintiff. I would not undertake to say how many meters or gas appliances had been installed by our company during any given period of time as the result of personal requests made by consumers of their own volition, as distinguished from the solicitation made by our canvassers. I know what the business was that we did and what the business cost us. It is probably true that some gas companies in the City of New York which do not sell or rent any gas appliances and that nevertheless those companies will show an increased consumption of gas through the use of gas appliances sold or rented to consumers by concerns other than the gas companies themselves.

On my direct examination I referred to the additional cost resulting from the operating of a new plant and system. I am not sure that if a new gas company were to start business in this territory new as of June 1, 1923, it would not build the kind of plant the Consolidated Company now operates. It would depend entirely on conditions. I should say they would not build them of a new design, because our designs are up to date. It may be that if we had a vacant lot, as it were, with no design, the arrangement would be somewhat different from our present plans. In so far as the type of apparatus is concerned, I should say it would be exactly the same. That is in so far as our water gas is con- [fol. 2485] cerned. There might be some modification in our coal gas. I did not assume anything one way or the other as to promoters of that enterprise putting up just exactly the kind of manufacturing plants that the Consolidated has. I took the value of the property as indicated by Mr. Miller's appraisal, as having a certain value as of a certain date, and said with that tangible property it would cost so much in order to put it upon a going basis, or to make a going concern out of it.

We are constantly investigating so-called improvements, most os which pan out the other way after you have investigated them. Within the last five years there have — some

additions and extensions made to the several gas mfg. plants of the Consolidated Gas Company, and we are making changes and modifications, and we hope improvements, at times. Naturally, there is an advance in the state of the art all the while, in everything, otherwise we would be going backwards. Not in every instance are those additions and extensions designed to increase the company's manufacturing capacity, only in some instances. Anything that improves conditions—an operating condition, an operating cost, or a less expenditure of capital, whatever it might be, they would all be taken into consideration. Of course, in consider*at*ing operating costs you have also got to consider the amount of money required to make an improvement in your operating costs, and the return on that must be taken care of. We could in several instances put in types of apparatus which would tend to improve our operating costs, but it would be expense of capital. In [fol. 2486] other words, an analysis would indicate that we were not justified in spending the money. We are always investigating to see whether or not we can improve our conditions in any possible way that we feel they can be improved. It would not make any difference whether it was capacity or anything else.

What I did in making up my estimate of going value in this case as testified to be me is indicated clearly upon my exhibit where I said that the value of the property as appraised by Colonel Miller as of June 1, 1923, had a reproduction cost of some one hundred and ninety odd million dollars, and that in determining the going value I assumed that this amount of money would be spent within a period of four years, that the production cost of gas as of the year 1923 was in excess of 84 cents, and for the purpose of arriving at a going value I stated that the operating costs would be in excess of that, for a going concern, to the extent of 15 per cent on the first year of operation, ten per cent on the second year of operation, and five per cent on the third, after which time, in so far as my exhibit indicates, in my opinion if it be on an operating basis it would be comparable to the condition of the Consolidated Gas Company on June 1, 1923. In other words, I took the values of the plants, as they are, or rather as they were on June 1, 1923, as shown by

the exhibits in evidence, and also took the operating costs, including production and distribution, as they were as of June 1, 1923. All shown on the exhibit, exactly what I have done. Not necessarily without regard to the question whether or not of a new gas plant were to be constructed the plant would be designed so as to operate more economically and more efficiently than the Consolidated was [fol. 2487] operating as of June 1, 1923. On the contrary, you might assume that you were going to put in a new type of plant and when you got it you would have something which you did not have before, and then the cost of that would be greater than that of the Consolidated Gas Company. If we were building a water gas plant as of today, of the Consolidated Gas Company, aside from some different arrangement we would put in exactly the same type of apparatus that we have today, because if it were not up to date we would not have it in use.

Our operating costs for 1923, the cost of producing and distributing gas, are in excess of 84 cents, and for the purpose of my computation I use a round figure of 84 cents [fol. 2488] in arriving at the losses which would accrue to a new company as the result of a new plant and personnel. In other words, it would take a period of time to round out that plant into a good operating plant, and the same thing would apply to the street department, and the officers and the entire personnel, which would be new, and the amount of money would be in excess, to produce a certain amount of business, than would apply with an old company with trained personnel. There is not any doubt about that. The figures that I have, in so far as Astoria is concerned, indicate very clearly that the figures which I used, of 15, 10 and 5, were very much lower than we actually found from experience. Upon my direct examination I testified that as soon as a part of the plant and main system had been completed, and is in readiness for operation, it is assumed that the new company will commence to set meters and install gas consuming appliances. As to how long prior to June 1st, 1923 did I assume that a part of the plant and main system had been completed my answer is that whatever the time was, if it was in 1923, if that was the inception of the plant or the beginning of its construction, as of June 1, 1923, based upon the prices of material and labor

[fol. 2489] as of that date, it would be two years hence before fifty per cent of the plant would be completed and ready for operation. My calculation is based upon a 50 per cent installation of the plant and equipment. A two year period after June 1, 1923. In other words, I have not assumed any plant built on June 1, 1923, I have assumed contracts for the development beginning on June 1st, 1923 and from that time on the construction and development would proceed.

When I testified "As soon as a part of the plant and main system is completed and in readiness for operation, it is assumed that the new company will commence to set meters and install gas comsuming appliances," I meant by that that the part would not be completed until two years after June 1st, 1923. Whatever time you take. You are going to take the prices of material and labor as of June 1st, 1923, when the contracts could be let, or the building of the plant as of that particular day and as of those particular prices for labor and material, but, it would require a period of time to construct the plant and property. I assumed a part of the whole would be completed and ready for operation two years after June 1st, 1923. In other words, you would have some plants, some mains, and the general equipment whereby you could make a going concern, which was part of the entire company, at the end of the two-year period. I did not assume any particular part of the territory would be completed, but I would have it looked over and pick out the better part; because in the calculations made by me I have assumed that we would get 50 per cent of the business in the one year period and 25 [fol. 2490] per cent in the year thereafter. In order to get 50 per cent in the first year you would have to get the better part of your business going. I assumed that certainly one manufacturing plant would be complete and probably more. They would probably be working on more than one, or on several. I did not sit down to make a survey as to exactly what was going to take place, because that would require a considerable lot of time. I should think it would be common sense to begin in the part of its territory where the heaviest gas consumption would come right away. And all you can view the matter of going value at is common sense

and how much money it is going to require to produce this business.

As to which part of the plaintiff's territory, the company would naturally want to begin operations because the consumption of gas was the heaviest, I did not take into account whether it was below 14th Street or above 14th Street to 59th Street or in the Heights section. I have not predicated my estimate on any particular part of the city—except within a three-year period after the completion of the first unit we would have it all developed. As to your question whether the particular part of the plaintiff's territory in which the company would be ready to begin operations would have a considerable effect upon my estimate of going value. I do not follow the reasoning that it would, although I may be wrong. I do not say that I am the last word in going value, but all I am trying to arrive at is what I believe would be a minimum amount that we would spend in producing this property, and I think there are many elements that I have left out which go to make up the development of this property into a going concern.

[fol. 2491] Assuming the company started its operations in that territory where the consumption of the gas was the heaviest, I think some business would come to it voluntarily, there is no doubt about it. Assuming that they had just moved, that everybody had moved in here from Jersey or San Francisco and were only here one day and that we were ready to connect them up on that particular day, we could get them. But in the development of this business, while they may be used to gas, they are having something there which they are using at the present time. In other words, they cannot go from one thing to another thing in one day, because they have something that is taking the place of gas the day before and that has to be displaced.

I would not like to say in what part of the plaintiff's territory on June 1st, 1923, the demand for gas was heaviest. I might make a guess, but it would only be a guess. We know where we send gas from, but as to the particular territories I would not undertake to say. Right off the bat I would say that our heaviest consumption was probably from 79th to 23rd Street-, Across the Island on both sides,

but I might be wrong. I think there are all kinds of people there, the majority of those people are accustomed to the use of gas. I don't know what part of those had just come from Jersey the day before. I am only saying that they may come from Jersey and be familiar with the use of gas, but in developing a property those people have something [fol. 2492] there which they are using in place of the gas, and that must be displaced. Before we turn on a meter or put in a stove or something of that sort, while we might get the application today and set the meter and install it a week hence, in the meantime the consumer has to have something to live by, a stove or something else. All that would have to be considered. Just to what extent I do not know. I think the figures that I have, when we started to do such a thing or a company undertook to do that would show a great deal more money to do that or develop that property than is indicated in my exhibit.

Before the company had started operations at all a part of my estimate for going value is attributable to the expenditures made for canvassing, demonstrating, storage and display, accounting and experimenting, etc. In other words, if you are going to do business as of a particular date you would not wait until that date to go out and try and get consumers. In other words, if you felt you were going to do business as of a certain time you would undertake to develop a personnel and organization and go out and try to get business. As soon as you are ready to operate you would start to develop that business which you had gotten prior to the time of actually starting. I would try to go out and get business before the plant was ready to operate. Some time before. Three or four or six months. In other words, if the engineers have said that we will have the plant ready on such and such a date, we [fol. 2493] will say, "Well, we will go out and try to get some business and tell these people that we are going to turn on the gas within a certain time, can't we do business with you?" A part of my estimate is attributed to preliminary canvassing—that is, before the main and plant system had been complete. What amount I do not know. I have not attempted to assign any sum for that preliminary work. That would be part of the whole, either can-

vassing, demonstrating or experimenting. It is all included in the promotion expenses. There is no doubt that they would do some work before any part of the main system or plant system had been completed; I think I would if I were running the concern.

Preliminary to starting up there would be a certain amount of experimenting going on for the purpose of showing the people and telling them what to do. It may be that you would have to build a gas plant whereby they would make gas for the purpose of trying out and demonstrating and developing before the actual property itself was completed. I would do that before the plant was ready to start operations, if I was trying to get business in three years. On direct examination I stated that I assumed there will be installed 50 per cent of all the meters and gas consuming appliances during the first year of actual operation of the property. I assumed that enough manufacturing plants had been built to take care of that business, whatever it would be. In other words, it is predicated on 50 per cent, 50 per cent of the expenditures of $190,000,000 would be completed in two-year period, which it is assumed will take care of 50 per cent of our business, and during [fol. 2494] that same period that is probably a year after the beginning of construction, another unit would be started which would be completed about a year after we started to deliver gas to the consumers. I made no assumption as to the locations of the manufacturing plants, except that 50 per cent would be completed in a period of time. I do not go into the locations where we were going to put that particular plant. We do not expect to do this in three years. I believe that we would install at least 50 per cent in that period of time, but that is an assumption. I do not know whether it is 40 or 50. I said 50 the first year and 25 per cent for the two years after that. That is reasonable and fair, in my judgment. There is no particular reason for my use of 50 per cent rather than 40 or 60 per cent except I assumed a certain amount of canvassing prior to the time we were putting gas on the district and that we would furnish more the first year than the other years. In other words, there would be more business coming to us the first year than the following two years and

that in the period of time figured on at least 50 per cent of the business would be taken in the first year.

Some people may come in and demand gas and we will give it to them and others we will have to go out and get their orders. This is predicated on a certain amount of money that would have to be expended in order to get the business under those conditions. I do not recall just how much of that estimate of $4.13 for setting meters I attributed to the cost materials used for connection. It was material and labor and the total amounted to $4.13. The [fol. 2495] iron connections, the cocks and the meter couplings are not included, they being in the tangible property appraised by Colonel Miller. The books include the meter cock and the cap and the swivel. There is an account on the books of the company to which is charged the cost of the material used in connecting the meters. As an operating expense outside of the meter cock, cap and swivel. I suppose that work would be charged to an account known as "setting meters."

I did get some of these figures from the company's books—that is, in making up this figure of $4.13. The company's accounts seggregate, the labor and materials of setting meters and appliances. In the accounting records that can be found. $4.13 would be for the entire labor, and the same holds true for cartage; cartage that would be applicable to the entire meter setting. And the books show that item. And the same thing holds true for handling labor, and storage. I do not know that superintendence would be shown as a separate item. The books do not show how much for the clerks. I think superintendence, clerks, and so forth are all under one item in the account, liability insurance, is under that title. Vacations and sickness would be indicated as to vacation and sickness. Instruction of employees in the performance of their work would probably be indicated in the amount as that. That figure $4.13 of setting meters was taken from the company's books during the calendar year 1923 and from those items I arrived at a figure of $4.13 for meter setting. All [fol. 2496] of those details are charged on the company's — as operating expenses. My estimate for appliances of $5.00 each is likewise based on what the company's books

show during the calendar year 1923, that was charged as part of the operating expenses. I do not know that, within the last two or three years, the Public Service Commission requested our company in writing to furnish it in writing with the details of the expenditures in its gas appliance business, and that the company replied it did not keep its books in such manner as to show such details.

The average cost of setting meters and appliances is not included in my estimate. My estimate of $6.00 per appliance for the cost of canvassing and so forth is all a matter of record in the company's books. That is adjusting appliances and collecting bills, expenses of salesmen and inspector's salaries and clerks, incidental supplies and expenses—all the incidental expenses applicable to the meter department, some of which are seggregated on the books of the company. You have to strike an average of course. All this has to be allocated on the amount of work done. I do not know as to which of those items I had to make some assumption. Display and storage expenses, I assumed a round figure there of $40,000. I figured that as a fair amount for the year 1923. I do not think you will find that $40,000 in that shape on the books of the company. I do not recall what the exact amount was. The company's books indicated that $40,000 for the year 1923. It was charged up to operating expense.

I have an item in my estimate of $6.00 for financing, by financing I mean, if we had to go out and purchase appliances in order to have them in stock, there would have [fol. 2497] to be a sufficient expenditure of money to keep those things in stock and therefore, to carry those appliances in stock there would have to be some increase in your funds.

When I refer to cost of setting appliances, I include all appliances in the district whether they were sold or rented, any that were attached to the business being done by the company in connecting up the range, whether they were purchased or given to the consumer. $6.00 is promotion per appliance, not setting. $5 is the figure for setting, as I recall.

Speaking of the actual experience of the Consolidated Gas Company, so far as appliances sold and rented are con-

cerned, they charge a certain rental for appliances. What is included in that I do not know. However, the exhibit of mine indicated the amount of money required to set an appliance and the other one indicates the amount of money required in the way of promotion for each appliance on the district. If in the case of sold appliances the prices at which the company sells to a consumer probably would be one of the elements that would enter into it in establishing their rental charge or their selling price. I imagine that is so. I do not know that to be the fact. I do not know what the company does in actual experience. I know they make a rental which is something beyond the actual interest on the investment; all of which, however, is credited to miscellaneous operating revenue in establishing the unit cost of the gas, the price at which gas appliances are sold [fol. 2498] and rented by the company. I think that would be done by the Commercial Department, Mr. Bamitz.

I do not know at what per cent above the purchase price of gas appliances such appliances are sold. I do not know that whatever the percentage above the purchase price is, that percentage is added on to reimburse the company for its overhead and to give it a profit. I imagine some of those or all of them, I think would be included. I have not inquired. The net operating costs during 1923 of the Consolidated Gas Company, excluding all intercompany charges, and after giving effect, to miscellaneous operating revenues during the year 1923 is at least 84 cents per M cubic feet which I consider a reasonable cost of operation. I assumed during the first year of operation of the new plant an increase of 15 per cent over 84 cents per M cubic feet, during the second year of operation an increase of ten per cent over 84 cents and during the third year of operation an increase of five per cent. I made the asumption on the basis of reasonable cost of gas of 84 cents per M in the manufacturing plants of the company as they were on June 1, 1923.

In considering the proposition as presented by me, I have considered that the reasonable cost of gas would be 84 cents after a modern plant was well ironed out, with a trained personnel, and that until such time with this new plant or plants that the excess cost over the present plants would be

the amount indicated in my exhibit as given on the direct examination, namely 15 per cent over 84 cents the first year, ten per cent over 84 cents the second year, and five [fol. 2499] per cent over 84 cents the third year, after which time I assumed that the operation would be normal and comparable with the conditions as of June 1, 1923, with our present plants, which were operating efficiently.

Assuming that on June 1, 1923 there were no gas manufacturing plants on Manhattan Island and that we were about to launch a new gas enterprise we would not build gas plants of different design than those in existence, which would manufacture gas more cheaply than the existing manufacturing plants of the Consolidated Gas Company do.

Any water gas plants that we build at Hunts Point will be no different design from the existing plants outside of detail of arrangement owing to the general area of ground, practically what we had at some of our plants at the present time. Insofar as coal gas installation is concerned, there has been no definite decision as to whether we will put in the type that we have or some other kind. When the construction of those plants at Hunts Point has been completed, I do not know whether the company will be able to manufacture gas more cheaply than it does now in its existing plants. It will depend upon the conditions and the prices of labor and materials as to whether it will be any more cheaply produced. I do not see that they will. For instance our C and D plants, any plant that we may build at Hunts Point, I think the operating results will be very close to those plants. There will be some slight difference. We will install waste heat boilers and such stuff as that, some auxiliaries which we have not in some of our [fol. 2500] present plants. That, of course, will to an extent affect the operating efficiency at the expenses of capital.

Those plants when they shall have been completed will be the last word in coal gas and water gas manufacture; so far as we can make them that way; we will try to keep up to date, and to that extent they will be more modern and up to date than the present manufacturing plants of the Consolidated on Manhattan Island insofar as some waste heat boilers and such stuff as that are concerned. The plants will be able to manufacture gas more at the expense of capi-

tal. I mean by that it is going to cost some money, of course, to install those plants. And additional money to install some of the appliances which we do not now have at some of our plants.

I know from my long experience in the gas business, both in the commercial end and the manufacturing end, that that is what actually happens. The analysis that I made of our operations at Astoria indicated that the increase in cost as the result of new plant and personnel was in percentage much higher than that which I have shown in my exhibit.

In a new plant you would have to assume a brand new personnel, if we are sta-ting a new company, that our increased percentages of course would be attributable to the fact that it would take some time to break them in and the ironing out of the plant itself. In other words, that there would be parts of the plant, some of the improvements that you might put in, of such design that in operation you would find that they would have to be changes made, in the actual operation of the plant. In other words, in a new [fol. 2501] plant there is always trouble with it. It does not make any difference how up to date it is, when you start to operate it you find that there are some things have to be changed and until these changes are made the operating expense is higher. I find that in our present manufacturing plants of the Consolidated Gas Company changes have to be made from time to time but those changes are made as the result of experience and they are only changes, and are usually made for the purpose of improving conditions in some way, either in operating results or safer methods of operation.

I do not think that before his death the late Robert A. Carter, who during his life time was Vice-President and Secretary of the Consolidated Gas Company was the head of the company's Utilization Department. He was very much interested in it, but, the actual operation of the Utilization Department came under the Engineering Department. Mr. Carter had considerable to do with the promotion end of the gas business during his lifetime. He was largely associated with the commercial end of the business. I think he was interested in all phases of the business. I do not know that it was any more special than many other things that he made a study of. Just how close he was in

contact with the work of that department, I do not know. If he so testified, that must have been the truth.

So far as the promotion of the Utilization Departments of the Consolidated Gas Company are concerned, my duties have brought me into active touch with either of those departments, but, not with the Promotion Department. That is in testing out of appliances and making investigations for [fol. 2502] new uses for gas, just as is done at the present time. Insofar as pushing the sale or use of those appliances is concerned, that has never been any part of my duty, not with the Consolidated Gas Company but with the Standard Company it was. For the last several years, 1897, 1898, and 1899, I think it was in 1898, I was with the Standard I was very much interested in that. I was made General Manager of that company and had charge during the summer of 1898, up to the time I left them in 1901, full charge of the commercial department.

I have contact with the Promotion Department, but I am not as closely connected with is as I would be if I were absolutely in charge of the department. I know what is going on generally, but I have too many other things which keep my mind busy. I am in touch with the Central Union Company, I am president of that and know what is going on. I do not keep in touch with it (the promotion department of the Consolidated Gas Company). I am not in charge of it in anyway, but as an officer of the Central Union Gas Company, I feel that I am justified in knowing everything that is going on.

Since 1897 and 1898, along in there, when I had charge of the promotion department of the Standard Gas Light Company, I have not been performing work of a similar character for any of the companies in the Consolidated transfer of gas system. To an extent I was engineer of manufacture and assistant chief engineer of the Consolidated Gas Company for many years.

The meter cock and meter cap and lining are included, as I understand, in Colonel Miller's appraisal. They call it the cap and swivel or cap and lining. I do not know [fol. 2503] what is the real name they use now. Just the material. Then the meter connection itself follows that, which is the co-k for shutting off the meter. The actual connection between those two is not in the Miller appraisal,

that is neither material nor labor. That is true of gas appliances. Colonel Miller has not taken from the books the cost per books of the gas appliances. That is any gas appliance that they may own is in Colonel Miller's appraisal; the cost of connecting the gas appliance in any way, or any material used in connecting up the gas appliance, is not in the Colonel Miller appraisal. In giving my estimates of going value, as they were on June 1, 1923, I have assumed as investment, an ultimate investment of some $191,000,000 which is the reproduction value of the present property, and that in the development of this business covering a period of time this amount of money would be expended; that for this property, including plant, mains and commercial department, the reasonable cost of gas would be 84 cents per thousand.

Of course, I have tried to explain that I did not assume what the plants would be. I assumed that the plants would be as efficient ultimately as the plants which we have today, which are efficient. Whether they would not be exactly the same, I do not believe that they would be exactly the same if we were laying out a new plant, but that the cost of the money, the actual cost, reproduction cost, would be indicated in Colonel Miller's appraisal, and that the operating results from this plant would be after tuned up, with the proper personnel in all departments, not less than 84 [fol. 2504] cents per thousand. In Colonel Miller's appraisal, in giving his reproduction estimates of the cost of reproducing those plants as of June 1, 1923, that figure that he gave assumed the physical reproduction of those plants and property as of June 1, 1923; that is my understanding of it. If it were a new concern I would assume a brand new personnel. Absolutely you have here a plant that you are building ready for operation. Now, there is no other company here. Then you are going to attach this business to the physical property which has been or is being installed. Now, with no company here it will require a new personnel. In other words, you have got to develop not only the business but develop the personnel with it. In other words, if you are going to attach this business, you go out and build the plant and then you build an organization. I can not reason it in any other way.

Cross-examination by Mr. Murphy:

The number of consumers of the Consolidated Gas Company fluctuates from time to time as their location changes. I do not know what percentage in a year do change their locations. It would not be any such percent as 30%. I think the percentage would be small where they change. Of course, there are changes where people move from one apartment house to another. Of course, those meters are all set and connected and you do not have the expense of that business as you did in building up a new business. In otherwords, somebody goes out and somebody comes in, and you go there and lock and unlock the meter. You do not have the expense of getting out new connections and all that sort of business: it would not be a development of [fol. 2505] additional business but simply carrying on the business that you have in hand. I cannot give the number of what you call locked meters in any one year, because they vary. It might give here some indication from the people that might ask to have the gas shut off. There is a variation in the locked meters. I do not recall just how many there are. I think the condition between one year and another the difference will vary.

Redirect examination by Mr. Ransom:

With respect to the figures which I give on pages 81 and 82, with respect to the actual average cost to the Consolidated Gas Company for setting of meters and appliances, exclusive of advertising, canvassing, and so forth, I have not included any of the elements of materials or labor that are comprised within Colonel Miller's inventory and appraisal. With respect to the work of the Utilization Department and the development of uses for gas appliances suitable for the economical and extensive use of gas that is a matter under the supervision of the engineering department; that has been for some time a matter under my supervision. It is my judgment and has been my experience that where you have a plant and distributing system constructed complete and ready to operate, there is a very material increase in cost of operation until you pass the period of tuning up and ironing out of the property. In

my judgment I have taken very conservative percentages to indicate that relationship.

Assuming that we have a new territory into which gas is extended as a result of petitions or complaints to the Public Service Commission or request of a large number of occupants of the territory we have such elements of expense in the new territory as advertising, canvassing, etc. [fol. 2506] That is very forcibly demonstrated in the Douglaston extensions of the New York and Queens Gas Company, where the Court finally order- the gas company to make extensions in that territory because of the demand. It required a period of almost three years before we attached the business in its entirety and the expense involved in developing that territory under those conditions closely approximated the figures I have used here. That is a case where the residents wanted gas and procured an order from the courts and the Public Service Commission for the installation of gas. The company found that when the gas was installed that consumption was immediately demanded. In some cases, and in other cases, they did not. And the average cost approximately, is the figure that I have given on page- 81 and 82 of the record with respect — the costs of demonstrating and the like is an average cost of getting such business. That is, some would come in without active solicitation and some would have to be solicited. There are many that would not cost you a cent and the others would cost you money. And this, in my judgment, is an average figure for the entire volume of business.

Refering to the cost to the Consolidated Gas Company of securing the elements which I have indicated as its present going value had not been initially and actually charged to operating expenses, that has no bearing on the question of the amount of their reproduction cost today, that is the cost irrespective of what and to whom it would be charged. It cost that amount of money to reproduce the business. That is, the company today has already gone through the process I have described and has secured the position of advantage on which I computed the cost of it. If we have [fol. 2507] plants of the company and the distributing system of the company in existence today; it would be necessary to collect the sum of money I have computed from

further investors or consumers to the extent of the amount of money which would come out of the stockholders or the consumer's money. In other words, it would be necessary to charge an additional price for gas through this reproduction period to secure these advantages or to have the cost of development of the business contributed by investors.

Recross examination by Mr. Donnelly:

I do not know whether any part of the plaintiff's territory comparable with that covered by the Douglaston extension of the New York and Queens Gas Company. I would not say it was directly comparable, but those people are all users of gas from other locations and were familiar with the use of gas. Douglaston extension is an extension of the main system of the New York and Queens Gas Company in that part of their territory known as Douglaston, which is the easterly end of the New York and Queens territory. The number of miles of main that run through the so-called Douglaston extension is only comparable to the extent as to the cost of getting business. I could not tell you off-hand how many feet of main. It is a rather long stretch of main in the territory. There is a part of it along above Little Neck that we call the Douglaston main, part of our main runs through unoccupied territory. I do not think it runs through much swamp land, because the main ran around in such a way [fol. 2508] so as to avoid going through that part of it. There is some low land at Little Neck. In that case we had to build or lay off an appreciable number of feet of main in order to reach consumers who are putting up this plant for lack of gas service, and one reason I called attention to the fact as to the great demand for gas is that it costs them a sum of money to meet that demand.

Redirect examination by Mr. Ransom:

In these figures I have indicated with respect to the cost of canvassing and soliciting, advertising and so on, to obtain business in Douglaston that did not include or have anything to do with the cost of laying the mains from the Flushing plant to reach the Douglaston territory. That is, this Douglaston territory is similarly separated

from the New York and Queens territory and we had to lay a number of mains in order to reach that territory and when we reached that territory there was a built-up territory to be served. The company put up a branch office there to get the business and we found there were consumers that we had to canvass in order to get the business.

[fol. 2509] WALTER R. ADDICKS, a witness in behalf of the plaintiff, resumed the stand.

Cross-examination by Mr. Donnelly:

I cannot mention any instance where the sum of $25,000,000 and over has been paid by investors for the going value of a going gas company. It is a fact that the Consolidated Gas Company recently purchased the Mutual Gas Light Company. The Consolidated Gas Company did not pay anything to the Mutual Gas Light Company for going concern value. As I recall, they paid simply for the physical property. I simply know that they bought the Mutual property intact for a certain sum of money approved by the Public Service Commission. I did not have anything to do with the negotiations leading up to the purchase and sale of that property. I testified on my direct examination in this case that it ordinarily is not practicable to ascertain from a gas company's books, if it has been in existence for many years, the full actual cost of these elements and advantages. I think that it would apply to any company. It would apply to the Consolidated Gas Company, for the entire period of the life of the gas company. I am referring to all the elements and advantages comprised in going value, whatever they may be.

Referring to estimates for going value for a gas company in which we were advising our clients to buy or not to buy, twenty-one years ago I advised in connection with two gas companies, one was the Rochester Gas Company of Rochester, New York, and the other was the Detroit Gas Light Company, as I recall at the present time, before I came to New York. The records show that. I did not have to do with the negotiations that led to the sales of

those two companies. I merely had the inspection and [fol. 2510] valuation and reporting to a gentleman interested in the matter and expressed my opinion as to what they were worth. I made a careful inspection of it. I do not recall making an inventory of the company's properties in the sense of taking each parcel and pricing it. Those two transactions were purchase and sale transactions, a gentleman wanted to invest in both of these properties, and in each instance I believe a sale took place. I recommended a figure at that time at which the property should be sold. I stated what I thought the property was worth. As I recall one was based on the capitalization of earnings, which was one method used for going value, but not the one I am using here. In making a value for these properties I did not make any specific valuation of the going value of either or both of those concerns. I think I gave a total, on the basis of their earnings. As I recall I valued the property as a whole. That included every element of the value of the property. The capitalization of earnings is the method I used as going value. I did not consider it myself separate from the rest.

I cannot mention any other instances besides those two, excepting so far as the companies I was interested in in Boston and the numerous purchases of plants in Boston, and in the case of those companies we bought companies and attached them to our system and what those prices were I do not remember at the time, except in one or two instances. The Rochester Gas Company and the Detroit Gas Light Company were I think coal gas manufacturers at that time. There was some water gas, too, because there were several companies. If I remember rightly, three [fol. 2511] companies in Rochester, but I will not be sure of that now. There were at least two. I don't remember what the manufacturing capacity of the Rochester Gas Company was, either as a coal or water gas nor of the Detroit Gas Company. I might have known at the time how long either one of those companies had been in existence. I do not know now. The Rochester Gas Company did not have a monopoly of the territory supplied by it, it was quite the reverse I think. Going value is merely the reproduction of the business of the company. I do not think the Detroit Company had a monopoly in its ter-

ritory of the gas business. I think that there was more than one company there. I won't be positive of that. I do not recall definitely whether there was more than one company, but I remember distinctly going to one company. It is too far back for me to recall the details.

Speaking of this Rochester company at a time twenty-one years ago, I cannot remember the names of the competitors in the gas business in Rochester at that time. It is entirely too far back for me to remember. I remember there was one water gas plant which was in the city proper and not connected, as I recall it, to either water or rail, that had some trouble by the explosion of oil in a sewer due to not being connected. That was a water gas company. How big it was or how small it was I do not remember at this time. I do not recall at what rate per M cubic feet the Rochester Company was selling its gas. Much of this study of mine in the instant case is a study of my own composition, and much of it is through a form which I made up, [fol. 2512] a form of presentation and I have had the assistance of counsel on it, of course. Nobody, outside of the assistance of Judge Ransom gave me any assistance in the preparation of it. I got up a form of presentation which was introduced by quotations from court decisions, and then a discussion; and then I got up a series of tables which are in here, some of them, and later on I expanded them and presented the bases of the tables, and much of the other argument that may appear in this thing, and I was assisted by Judge Ransom in the preparation of this. I won't say just what I did or just what I may not have done. There were some points here that Judge Ransom suggested and they were incorporated—and which I read over very carefully and commented on and changed and so on. I cannot tell you any specific part.

I put some of the authorities which are cited in this study of mine in originally, notably Judge Miller's, when I began this, and all the others were contained in various forms that I had in my own office and was reading and considering, I picked out Judge Miller's. That is what I opened my original computation with. I am referring to the decision by Judge Miller in the Court of Appeals in the Kings County Lighting Company case, that is one of the first ones. I have cited a number of court decisions here.

I think I have seen the case, Knoxville vs. Knoxville Water Company, 212 U. S. p. 1. I think I recognize the figures, "Cost of reproduction $538,000, amount allowed for going concern value $60,000, per cent of cost of reproduction value to going value 11.1."

[fol. 2513] In the case of Des Moines Water Company vs. Des Moines, 192 Federal Reporter, 193, where the cost of reproduction was given as $1,685,978, the amount allowed for going value $168,277, or approximately 10 per cent, I do not recall those figures. I did not read the case, neither do I recall the Des Moines case in 199 Fed. 204.

I do not recall the case of Gloucester Water & Supply Company v. Gloucester, 179 Massachusetts, 365. I do remember the case of Omaha v. Omaha Water Company, 218 U. S. 180, but I do not remember the details. That is one of these cases that I have been very familiar with in the past, because it was originally in the 80 cent gas case, and referred to these in detail. Unfortunately I do not know these cases by the numbers.

I base my estimate of $40 per active meter for going value on my judgment, experience and knowledge, and, further, on the cost as shown by the Consolidated Gas Company's books for 1923, on page 26 of this brief—of this testimony. The books of the Consolidated Gas Company for the calendar year 1923 do not show a cost of $40 per active meter. I mean that the cost of obtaining consumers in 1923, the actual outlay, indicates a cost of $48.73, and in connection with that if you will kindly refer to that page I would like to make a correction of a figure. See page 26 of printed copy, the last figure is $26,681,500. It should read $26,801,500. You will further find on page 10 of the Plaintiffs' Exhibit No. 893 for Identification that during a period of ten years the cost has been $86.35 and for the period included in this statement $46.31, from 1909 down. Showing a tendency for the longer period of a less price than for ten [fol. 2514] years, as I stated, $46.31 for 14 years, and in 1923, $48.73, and I thought it conservative and fair to take a figure not exceeding $40. I do not recall any case where such a computation of $40 per active meter was made and upheld. I am giving you my judgment, experience and opinion. This matter of the cost per active meter is quite an ordinary arrangement. The other methods I think I

gave you, some of them, did I not. As far as this method that I have pursued here is concerned, while it is not identical with the others, at the same time it touches to a degree on one or the other.

I have read repeatedly many of these cases of going value and the methods pursued, for instance, in Wisconsin and elsewhere. I have heard testimony with respect to it. The amount per meter is not an unusual one to use. Colonel Miller used it in this case. I am familiar with the bases by which I made up this estimate of going value. I used more than one. I have a number of references to various cases here showing the sources of the bases that I have taken from the cases that have been used—in what cases those bases have been used. The one counsel referred to is the basis that I am more familiar with, that you are referring to there in that paragraph, and that is the amount of going value as compared with the annual income and the going value as compared with the per cent of the replacement value has largely been used in the Alvord method wherever that method has been used. It is a very usual case to be used, but to cite you every case where the Alvord method has been used or any of the cases where the Alvord method has been used, I do not think I could do it at this [fol. 2515] time. Alvord methods and mine are very different. I think I have used an entirely different method from that used by Alvord in computing going value, but I reach some figures corresponding to those Alvord has stated *he* has reached. In other words in some of these computations that you will find here you find that *they* are 20 per cent of the going value, and the going value is substantially the annual gross revenue, and those are the two statements I assume you are referring to here. Alvord states in his model method that it would be about 20.8 per cent of the sum of the reproduction value and the necessary working capital, that it amounts to materially more than the annual sales or rather gross income in *his* figure. There I do not check with him. I have a larger amount in these computations of mine. The going value plus the reproductive value plus the working capital is around 17 per cent.

I did not make a study of the cases which went to the Supreme Court of the United States in which this subject

of going value was discussed. I have not the time to make all those studies. I picked out some cases in my study, but I have not attempted to take the entire case from beginning to end. I have known of the cases which within the last five years have gone to the Supreme Court of the United States and in which the subject of going value was discussed by that court, but I do not recall them now. My impression is there has not been a single one of those cases which went to the Supreme Court of the United States in which that court sanctioned and approved an allowance of as much as twenty per cent.

[fol. 2516] I do not know that in the Galveston Electric case the Supreme Court of the United States, speaking through Judge Brandeis, upset the theory of going value used by Judge Miller in the Kings County Lighting case. These citations are to indicate the base of going value or the definition of going value. That is the purpose of showing this in detail. It is not with the idea of following up a case to see whether it is supported or otherwise. I have not made any computations showing what percentages were allowed for going value by courts and commissions in the cases cited by me in my study. I know of some, whether by courts or commissions. I have a general idea that the limitations have been from ten to thirty per cent, but what the particular ones are I cannot say. I said twenty per cent for the courts, the range of computation was thirty per cent. My recollection is the Public Service Commission of New Jersey have allowed as high as thirty per cent for going value, in connection with a Passaic case.

I do not understand that the thirty per cent allowed in the Passaic case included not only going value but all overheads. There were certain amounts which might bring it down to twenty or twenty-five per cent. I have not been before the Public Service Commission on that subject at all. I have not had anything to do with it. I have no doubt these cases cited by me in my study are not the only ones. I selected these cases on the subject of going value. I selected the first one and Judge Ransom has suggested most of the others. The others I had in my record, however. And I had some that the Judge did not select.

[fol. 2517] These citations that I have set forth represent those which would indicate what my understanding of

going value was as I communicated it to Judge Ransom. I had a pamphlet containing a great many of these cases and some of these were from the published pamphlet and some not. It was a compilation made up by counsel and I carefully examined it all. Some of these are in and some are not.

The company's books show expenditures which are actual, extending over a period of at least from 1909 to the present time. What I am including is the cost of promotion expense and utilization department, and nothing else. I am refreshing my recollection from a memorandum prepared by the Commercial Department. It is one of the things that I had Mr. Davidson check. I did not personally check these items; I had Mr. Davidson check them, as he testified. I do not know whether or not the company's books show that item for canvassing in that way. I can only show what is included within the item "Promotion expense," but whether canvassing is separated directly from some other I could not answer. I have a memorandum which shows what it includes.

The actual expenditures of the company in obtaining consumers is, to a certain extent at least, ascertainable from the company's books. I have a certain series of figures in the totals covering that expenditure. I could not tell by looking at that how much was expended for canvassing in any one year. I could tell the utilization. Utilization is that department which undertakes to examine all the appliances for development or for sale, and undertakes to advise architects and builders on matters in which they are interested with respect to the use of gas, undertakes to [fol. 2518] advise the Commercial Department as to any large installation or prospects for gas, and undertakes to advise as to the practicability of the use of gas in specific cases. I could not say whether the company's books are kept in such a way as to show during any one of the years 1909 to 1924, both inclusive, what the company expended for advertising the sale or rental of gas appliances or what it paid for demonstrating or for display or cartage. I do not have that detail, or labor handling.

In making up my estimate of going value, I assumed that any of the estimate is attributable to work done preliminary to the actual start of operations by the company,

only in connection with canvassing, that is all. In making up my estimate I made an attempt to segregate what preliminary canvassing would amount to in cents per thousand. I figured that about three months should cover the length of time for educating the canvassers, collecting them and getting them together, and picking up what business they could during the three months, and I took that at about one-fourth of the annual amount or 12½ per cent, and I adopted ten cents for the three months period. That would be on the amount sold in the first year after the company started operations. Ten cents per thousand cubic feet of gas sold for this preliminary canvassing on the first year's business. Not after the first year. I did not make any assumption as to the part of the plaintiff's territory where the company would start operations, nor with how many miles of mains the company would start.

In giving those figures showing the number of cubic feet [fol. 2519] of gas sold in each one of these five years that I have set forth. No item of manufacturing plants were considered by me to have been completed in the years when those quantities were sold, I did not concern myself with the population of the plaintiff's territory during each of the years when those quantities of gas were assumed to have been sold. All I concerned myself with was the fact that we were going to sell 4,800,000,000 cubic feet of gas and that we had the plant to sell it; then, what does it cost to sell it. I did not assume any gas appliances were to have been sold and rented during that five years. I did not consider them at all, either sold or rented.

I have not considered the cost of gas appliances in any way, shape or form. I am taking here a certain number of million feet of gas to be sold in a given year. Now how much will it cost to enable the company to sell that number of feet of gas? I find this situation: I find a plant which is complete; the cost of reproduction is all set forth; I find there is one missing point to enable us to sell gas. I do not care what it is sold through; I do not care if they open the meter and let it go out into the air. But it is one missing link to enable us to sell gas and it costs so much money, and that is the cost of connecting the meter; and it is the only thing I have interested myself in. I have given an estimate here of what it would cost to finance a business

to sell the number of cubic feet of gas in each, one of the five years that I have given you here—I want to know how much it will cost to supply that 4,800,000,000 cubic feet of gas and I do not care anything about anything else.

[fol. 2520] New York, June 24, 1924.

Met pursuant to adjournment.

WALTER R. ADDICKS, a witness in behalf of the Plaintiff, resumed the stand.

Cross-examination continued by Mr. Donnelly:

In making up my estimate of going values, I have not considered the question as to whether the manufacturing plants and distribution system of the Consolidated Gas Company including Astoria were located where the company's plants now are situated. I simply assumed the reproduction of the Consolidated Gas Company in toto, but as far as my going value is concerned it has no effect on my computation. I assumed the reproduction of this plant, as they are. I likewise made an assumption as to the reproduction as of June 1, 1923, with all of the conditions as to population. I did not make any attempt to segregate and assign a specific item to the cost of canvassing, or the cost of advertising, or the expense of encouraging the substitution of gas for other fuels, and the greater use of gas, or the expense of devising, developing and extending new uses and better uses for gas, for light, heat and power, or the expense of introducing new and improved appliances. I did make an attempt to segregate and assigne- a specific sum to cover what I described in my direct examination as the lack of earnings while obtaining sufficient patrons. The sum I assigned to cover that is shown in Item 3, page 27. I am referring to the printed copy of my study which was handed to defendants counsel.

I did attempt to segregate in making up my estimate for going value and assigned a specific sum to the cost of tuning up and ironing out the properties until they had struck their gait, including the output as of that time and the growth up to a larger output; I allow fifteen cents per

thousand cubic feet for the first year and 7½ cents per thousand cubic feet for the second year. After the second year I assume a uniform condition. Those cents per [fol. 2521] M cubic feet that I have assumed on an assumed output of gas for each of the years, included in my study, were based upon my own personal knowledge, judgment and experience. They were not based in any way upon anything that is set forth in the books of the Consolidated Gas Company. Thirty seven years experience in the gas business, I refer to as my bases in those assumptions. By my early experience I have started works from nothing, and I have not only been in charge of such plants, but I have also been in charge of plants that were started practically from nothing and grew up to larger outputs; that is to say, there has been a great extension in the plant in the course of several years. Understand, this 15 cents applies to an entire company in all its phases. It would not be any particular part of the company, it would not be necessarily the manufacturing or the distribution or the office, but the 15 cents would apply to the entire output. The 15 cents likewise includes the ability to earn sufficient earnings during the period—the 15 cents per thousand more than whatever I would consider the normal cost to be. That would depend entirely on what your price of gas was. I have taken the price of gas as the price which would be eight per cent on the value of the property, a reproductive value of the property, and I have also taken two different items, $190,000,000 and the other $94,000,000.

[fol. 2522] I have not dealt with the losses at all; I am reproducing the plant as of today, and if I reproduce the plant as of today there will not be any losses, but there will be charges that we will have to meet during the first year and first two years in my very best judgment. Now, it has nothing to do with the past losses, or anything of that kind. I say this—that if you start a plant today in New York on the proposition that I have set forth here, your result will be that for the first year, taking any price of gas—and I have taken no price of gas specifically, it does not interest me so far as this computation is concerned, as to what the first base price is going to be for the future period—but whatever that price is, the first year you must expect and you will certainly meet at least an increased cost of 15 cents per

thousand, and in the second year an increased cost of at least 7½ cents per thousand. It has nothing to do with past losses whatever.

In making up my estimate for going value, I did not make any assumption as to the number of employees who would be engaged in canvassing, in demonstrating, or in experimenting with the appliances. It is a fact, that these expenses of demonstrating, canvassing, advertising and otherwise promoting the sale of gas are charged on the books of the Consolidated Company as part of its operating expenses. I do not keep the books, but that is where I would expect to find it. I did not make any assumption as to the size of the salaries that would be paid to the canvassers or solicitors or demonstrators. In making up my estimate for going value I did assume that some preliminary can- [fol. 2523] vassing and advertising would be done before the plants were ready to start operation and I have segregated that expenditure very clearly in this statement, on page 27 of the printed copy.

Item 6, reads: "Cost of obtaining new business 60 cents per M cubic feet during the first year." I mean by "during the first year" the first year of operation. You cannot get a cost per thousand until you are selling gas. My supposition in this case was that we started in to get our force together, get our canvassers and drill them, and insofar as possible get orders for gas, and I figured three months. Now, the amount I have figured for a year is 50 cents per thousand. Now, whatever that cost was would have to be included in the first year while we were making gas and for three months it would be one-fourth of the year and I divided the 50 cents by four and got 12½, and I made the price 10 cents, less 12½ on the supposition that it would not cost so much starting in as it would in the first year. I added that 10 cents to the first year and the first year only, which really does not represent a year but a year and three months.

Referring to the printed page 23 of the copy of my study, the necessary losses attending experimentation in property and methods which promise improvement covers items which are frequently considered, but I did not consider it. I do not mean by that that no part of my estimate for going

value is intended to cover in dollars and cents anything for that branch of my study. Insofar as this reproduced plant might meet that, I intended the 15 cents for the first [fol. 2524] year to cover whatever might happen in any direction under the exigency of starting the plant and 7½ for the other. When I say "starting a plant" and use the word "plant," I am referring to the entire company's plant and not any manufacturing plant.

"Cost of perfecting minor details of construction and operation—initial losses during period of training and coordinating staff of employees." I should say that 10 cents allowed from the 50 to 60 might possibly include something of that kind, and the 15 cents would cover anything else in this reproduced plant. It should be expressed as "increased expense" rather than losses.

As an increased expense, I assumed during the period of training and coordinating the staff of employees, just what I have stated, 10 cents for the first year on the canvassing force and 15 cents on the entire force of all kinds for the first year, and 7½ cents for the second year. The 10 cents for the canvassing force refers to a period prior to starting the plant. I assumed the employment of a staff at the beginning who were not familiar with the performance of their duties, no matter if they were ever so experienced; they would not be experienced in this organization. One would naturally go out, if he was hiring people, and get the best men available, but you cannot always accumulate a force such as a company like the Consolidated has, even if you have the entire country to choose from, and you have got to work that organization up. I think if [fol. 2525] there is no organization whatever, even if there are good men, when you reproduce your plant you do not necessarily know of every good man or what his position might be; you have to train him and get him into shape when you reproduce your plant.

I think the 15 cents and 10 cents per M cubic feet would cover that. I mean to say this: I say it is a minimum recovery. I know of cases where it has been 24 and 48 cents, but I have not taken those. That is in the case of the Brookline Gas Company, at the time I was chief engineer, in the 90's, but I have taken a minimum case which

I know existed. The minimum case which I know exists is when I started the Bay State plant under my own personal direction. That was in 1891 and 1892, I think. It certainly would cost more now than it did then, as far as cost is concerned. I would anticipate more. I have not attempted in this study to take anything but minimum value.

Regarding the testimony "Losses representing the greater costs of operation before the properties and personnel are co-ordinated and tuned up," those are simply items that I have just stated a few moments ago, that are sometimes taken into consideration in connection with going value. I say I did not take that into consideration in my study except insofar as I have testified, I included it here simply because it is an item of going value that is frequently considered. I cannot give you any idea what those losses would amount to represented by dollars and cents. In a new plant that we started we blew up the gas blast main in the course of two or three months; but ex-[fol. 2526] actly what such losses would amount to now would be I do not know.

As to the costs of setting the meters and the appliances, all of the elements such as the labor of getting out the materials, the cartage, the handling labor, the storage, the superintendence, the clerks, the liability insurance, the vacations and sickness, instructions of employees in the performance of the work, and whether all of those expenditures are entered upon the books of the Consolidated Gas Company as part of its operating costs, I am not able to personally answer that question. I have the cost here under four items, and this is one of the items that I asked Mr. Davidson to check, and these items include labor, they include handling, material and cartage, and the general cost, which is a separate item, the total being $4.13 per meter.

I do not know of my own knowledge that those details that I just enumerated in my previous question are charged on the books of the Consolidated Gas Company as part of the company operating expenses. They are undoubtedly charged in the records of the Consolidated Gas Company as part of the company's operating figures. Just where I do not know but I asked Mr. Davidson to check those figures

as part of the companies operating figures. I have no doubt about that whatever. I misunderstood your question. I have on an occasion prior to this testified in an action giving my opinion of going value for a gas concern. I was in the original Consolidated Gas Company case which was in 1906 or about that time. I am referring to the suit that was brought by the Consolidated to test the validity of—the original 80 cents Gas law. I don't remember ever [fol. 2527] testifying in any other case than that.

Redirect examination by Mr. Ransom:

I cannot say whether the computations which I give on pages 27 to 33 of my printed study of going value are based on the assumption of completion of the entire physical property before the beginning of operation. As to how much of the physcial property I assumed was completed at the time I began to sell gas, in my first computation, I proceeded on the assumption, that I could undertake to operate —and it was a minimum; I mean an assumption that was rather extreme to take—that I would commence to operate in 18 months after the beginning of the plant, but in operating in 18 month after the beginning of the plant I did not take any return on capital during the first six months of operation. The plant is to be finished entire and complete in two years. My first assumption is based upon the idea that the plant would be completed in two years and that I would begin to furnish gas at the end of 18 months. I would begin to furnish some gas at the end of 18 months, but I did not take into consideration any return on capital whatever for the six months, the first six months of that year.

My computation shown on pages 33 to 38 of my printed study is based upon the assumption of piecemeal construction of capacity in four units, beginning to operate two years after beginning construction or immediately after the first unit of construction is ready to operate, and produce suf- [fol. 2528] ficient gas with some reserve for the first year. This differentian or ratio which I have assumed between the cost of gas in the first and second years, of operation of a plant and distributing system and the cost thereafter, namely, a ratio of 15 cents and 7½ cents, that ratio is based

on my experience. I have found that that ratio has existed in cases within my experience. I have set out in this study various computations which were for the purpose of checking what these elements of going value would be and they do not pretend to cover other items of going value which are set forth in detail in my testimony. I did not base my conclusion upon any one of those computations. These computations relate to and cover only the elements that I have stated as comprised within them, that is, only the elements that I have computed.

I have presented her certain computations with respect to the cost of obtaining consumers and attaching the business, but that is not all of the elements that there are of going value. I have indicated in my study certain other items and elements. I have not in any way taken into account in forming this estimate or opinion as to the amount of going value the question of whether the Consolidated Gas Company did actually sustain losses in its early history or deficits below a fair return. I simply took the present cost of what is to be reproduced in this property as it stood on June 1, 1923. I did not take into account or undertake to place a valuation on any element of good will or any element of valuation of monopoly or preferred position in a particular territory. I said on cross examination that in some early purchase and sale transaction I had used the basis of cap- [fol. 2529] italization of earnings or of earning power. I have not presented here any computations on that basis. I would not regard that as a proper method of estimating value for purposes of a rate proceeding. I devised the form and substance of the computations. As regards the preparation, I certainly had the advice of counsel and on all my computations I asked Mr. Davidson to carefully go over all of the computations. The computations are made as originally made by me, and here are the originals. If he found an error in my computation arithmetically, of course, he corrected it. He so informed me.

I am familiar with what is sometimes referred to as the Alvord formula or the Alvord method an engineering computation of going value. I have read it very carefully and repeatedly. I have not in this study or in reaching this estimate of going value used the Alvord formula or the Alvord method, except in so far as you might say that

when I reproduced a plant I am reproducing a plant as an original plant; but there is absolutely no relation whatever between my computation or my method and Alvord's method and I have not used or taken into account the Alvord formula or computation. I had nothing in mind that would even suggest it to my mind.

Mr. Donnelly asked me with respect to certain bases which I indicated as sometimes used, although not used by me except for comparative purposes, as shown on pages 7 and 8 of the printed version of my study. I have been familiar with the method used by some persons of estimating going value in relation to the amount of gross annual rev- [fol. 2530] enues from gas sales. Mr. Alvord made statements on that basis outside of the Alvord computation or formula. I did not in reaching this figure which I have given here as the amount of going value, in my opinion, adopt or use except for purposes of comparison or check either the method of relationship to annual revenues from gas sales or the method of percentage of present value or the method of lump sum of development cost per active meter. I did not in preparing or reaching my estimate as to the amount of going value use or take into account any of these definitions of going value quoted from opinions of courts for any other purpose than definitions. To define the boundaries, practically the metes and bounds of the question. I did not take into account or use as one of my factors in reaching the amount of going value in any way the question of what percentage or amount had been allowed for going value in any decided case. I was asked yesterday by Mr. Donnelly with respect to the decision of the Massachusetts Supreme Court in the Gloucester Water Supply Company against Gloucester case 179 Massachusetts. I was not aware that the Supreme Court in that case approved an allowance of 15 per cent of the value of the physical property at the time he asked the question. I was asked yesterday about the Houston Electric Company case. I was not aware that in that case the amount allowed for going concern value was in excess of 28 per cent of the value of the physical property.

I was asked with reference to the case of the Public Service Gas Company in New Jersey. I was aware of the [fol. 2531] fact that the Supreme Court of New Jersey ap-

proved an allowance of 30 per cent of the structural cost for going value, made by the Board of Public Utility Commissioners if that is what I recall as the Passaic Case. I referred to that and made certain qualifications as to the net for going value being a little below 30 per cent according to my understanding of it. It is a fact that I did not take into account the amounts or the percentages allowed by any court in any case, I merely tried to determine the cost of connecting the business of this company as stated, and the value of the other elements which I have indicated were taken into account by me. I did not include the cost of financing, or rather, allowance for financing, in the additional amount of capital required to do this work. I particularly avoided it. I wanted to get down to its bare terms. In the computations which I made for illustrative purposes on pages 27 to 38 I did not include the cost of financing as one of my elements, that is to say, half way down page 38.

Recross-examination by Mr. Donnelly:

I have found that the ratio or differential that I have given here has existed in my experience with gas companies operating about 34 years ago and I testified yesterday that I could not pick out what particular part or parts of this study had been contributed by plaintiff's counsel. I got counsel's assistance and we went over all phases of it. I would not undertake to say which particular page or pages of this study is the result of the contribution of plaintiff's counsel because there were various changes back [fol. 2532] and forth. I might go over each item and I might remember, but I do not believe I could, but it is a fact that part at least of this study is the result of the contribution of plaintiff's counsel. He made valuable suggestions. That was Judge Ransom. I never talked with Mr. Goetz about that, as far as I remember. Mr. Goetz had no part in the make-up of this study either by way of suggestion or otherwise. That is my best memory.

Redirect examination by Mr. Ransom:

Neither Mr. Goetz nor Mr. Garver nor Mr. Davidson or any one suggested to me either the form or the substance or the basis of any of these computations. I originated

the method myself and gave Mr. Garver and Judge Ransom what I thought should be the form of this study of going value, which included the outline of the metes and bounds and stating the factors and bringing to its lowest terms, from my point of view, just how much it cost to do this work; but in the matter of defining what it was desired that I should value and place a value upon for the purposes of this case I obtained the aid of counsel in such definition and such details as appeared later on as desirable to cover; but the initial work of this thing is entirely that of myself. Many of the things which I have included and which I have excluded were made under the advice of counsel. I won't say they all were, because I had a great, great many of them in there; but some of them were made under advice of counsel.

[fol. 2533] HERBERT C. DAVIDSON, a witness on behalf of the plaintiff, recalled:

By Mr. Ransom:

(Tables referred to on page 11 of Exhibit 893 for Identification received in evidence and are as follows):

"Consolidated Gas Company of New York

Actual Direct Labor and Material Costs of Setting Meters During the Year 1923

Labor (including handling)	$39,030.90
Material	18,093.18
Cartage	2,304.55
Superintendence and Supplies and Expenses	12,553.76
Total	$71,982.39
Number of Meters Set	17,408
Average cost per meter Set	$4.13

Consolidated Gas Company of New York

Actual Direct Labor and Material Costs of Setting Gas Appliances During the Year 1923

Labor of Setting	$170,097.46
Material	93,341.58
Cartage	60,281.48
Handling	34,687.60
Superintendence and Supplies and Expenses	75,449.88
Total	$433,858.00
Number of Appliances Set	86,720.
Average cost per appliance Set	5.00"

[fol. 2534] Pages 9 and 10 of Plaintiff's Exhibit 853 for Identification received in evidence and marked, respectively, Plaintiff's Exhibits 901 and 902, and read as follows:

PLAINTIFF'S EXHIBIT 901

Consolidated Gas Company of New York

Actual Cost of New Business (Annual Gas Sales) Since 1909 (When Mr. Addicks Assumed Active Relationship to This Work)

Year	Gas sales		Promotion expense (new business), amount	Utilization department	Total promotion expense & utilization dept., amount
	Cubic feet	Increase			
1909	15,298,837,100				
1910	16,044,272,700	745,435,600	$152,726 96		$152,726 96
1911	16,175,163,200	130,890,500	178,924 24		178,924 24
1912	16,641,107,600	465,944,400	190,044 41		190,044 41
1913	16,553,735,700	†87,371,900	182,696 19	$20,022 23	202,718 42
1914	16,508,900,700	†44,835,000	172,900 84	36,637 38	209,538 22
1915	15,679,825,300	†829,075,400	169,758 61	38,390 89	208,149 50
1916	16,295,126,600	615,301,300	146,992 22	36,613 89	183,606 11
1917	16,891,064,100	595,937,500	219,105 89	38,634 70	257,740 59
1918	18,029,245,000	1,138,180,900	175,960 30	35,861 95	211,822 25
1919	18,576,440,300	547,195,300	192,686 47	38,895 74	231,582 21
1920	20,753,111,600	2,176,671,300	228,722 48	41,353 55	270,076 03
1921	19,396,607,100	†1,356,504,500	209,498 73	54,133 69	263,632 42

1922*	19,931,447,000	534,839,000	261,963 66	48,290 60	310,254 26
1923*	22,025,580,400	2,094,134,400	269,437 46	53,908 48	323,345 94
Total Increase and Cost		6,726,744,300	$2,751,418 46	$442,743 10	$3,194,161 56
Cost per M. Cu. Ft. of New Business (14 Year Period)			$ 4090	$ 0658	$ 4748
Increase & Cost—(Last 10 Years)		5,471,845,700	$2,047,026 66	$422,720 87	$2,469,747 53
Cost per M. Cu. Ft. of New Business (Last 10 Years)			$ 3741	$ 0773	$ 4514

107—357

*Volume of sales acquired from N. Y. Mutual Gas Light Co. not included because promotion expense and utilization expense of N. Y. Mutual Co. up to that time are not included.
†Red in original.

1680

688—

[fol. 2535] PLAINTIFF'S EXHIBIT 902

Consolidated Gas Company of New York

Actual Cost of New Business (Meters in Active Service) Since 1909 (When Mr. Addicks Assumed Active Relationship to this Work)

Year	Active meters		Promotion expense (new business), amount	Utilization department	Total promotion exp. & utilization dept., amount
	No.	Increase			
1909	446,306	.....	.....	.....	.....
1910	469,571	23,265	$152,726.96	.....	$152,726.96
1911	477,049	7,478	178,924.24	.....	178,924.24
1912	483,727	6,678	190,044.41	.....	190,044.41
1913	486,676	2,949	182,696.19	20,022.23	202,718.42
1914	486,958	282	172,900.84	36,637.38	209,538.22
1915	489,275	2,317	169,758.61	38,390.89	208,149.50
1916	497,470	8,195	146,992.22	36,613.89	183,606.11
1917	502,566	5,096	219,105.89	38,634.70	257,740.59
1918	501,120	†1,446	175,960.30	35,861.95	211,822.25
1919	504,891	3,771	192,686.47	38,895.74	231,582.21
1920	517,209	12,318	228,722.48	41,353.55	270,076.03
1921	514,811	†2,398	209,498.73	54,133.69	263,632.42
1922	511,066*	†3,745	261,963.66	48,290.60	310,254.26
1923	515,278*	4,212	269,437.46	53,908.48	323,345.94
Total Increase and Cost.		68,972	$2,751,418.46	$442,743.10	$3,194,161.56
Cost of New Business ped New Meter.....		.....	$39.89	$6.42	$46.31
Increase & Cost (Last 10 Yrs.).....		28,602	$2,047,026.66	$442,720.87	$2,469,747.53
Cost of New Business per New Meter (Last 10 Years).....		.....	$71.57	$14.78	$86.35

[fol. 2536] (Counsel for the plaintiff offered in evidence the remaining pages of Exhibit No. 893 for Identification, namely, the pages showing value and growth of gas sales from 1884 through to 1923; the number of meters in active service year by year over that time; the sales per meter and the increased use of gas over the same period; the miles of mains and saturation of territory over the same period; the financial history of the company as to volume and growth of investment; the population of Manhattan Island; the number of employees of the Consolidated from 1907 down; the outstanding capital stock and obligations of the company from 1884 down; the rate of dividends

*Number of Active Meters acquired from N. Y. Mutual Gast Light Company not included because promotion expense and utilization expense of N. Y. Mutual Gas Light Company up to that time are not included.

†Red in original.

paid from 1884 down; the volume and growth of applia-ce rentals and sales and of the utilization of gas from 1909 down; the cost of property retired from 1885 down; the normal working capacity of manufacturing plants and variation between maximum and minimum days' sendout in each year from 1889 down. Plf.'s Exhibit No. 893 for Identification received in evidence and marked Plaintiff's Exhibit No. 893).

Cross-examination by Mr. Donnelly:

Referring to printed page 10 of Plaintiff's Exhibit No. 893 I mean by the expression, "When Mr. Addicks assumed active relationship to this work" is in parenthesis and follows, "Actual Cost of New Business (Meters in Active [fol. 2537] Service) Since 1909," Mr. Addicks assumed a general supervision of the general development of the business and his responsibilities were very broad but they included the Promotion Department and the general development of the sales of gas of the Consolidated. The Utilization Department would come in the same category as the promotion expense, which would be included in his general charge of that work. It is a fact that for the period covered by that page, that is to say, from the year 1909 to and including 1923, the expenses of the Promotion Department and the Utilization Department are charged on the books of the Consolidated Gas Company to Operating Expenses. The late Robert A. Carter had considerable to do with the Utilization Department during his lifetime but Mr. Carter's activities were so broad that they had their influence in every department of the business. I would not attempt to define them. I know that he was very much interested in the work of the Promotion Department and the Utilization Department, and was in constant touch with it. I worked under Mr. Carter from January 1919 until the time of his death, with reference to such work as he required of me.

Redirect by Mr. Ransom:

During part of this period, 1909, down, Mr. Addicks was either Vice-President or Acting President during this entire period and during a part of this period Mr. Carter was Secretary of the Consolidated Gas Company. In or

about the year 1909 Mr. Addicks opened a special office for the development of new business and initiated a cam-
[fol. 2538] paign for the acquiring of new business.

ALTEN S. MILLER, a witness on behalf of the plaintiff, resumed the stand.

Cross-examination by Mr. Donnelly:

Referring to Plaintiff's Exhibit No. 887, which is one of the exhibits prepared by me in arriving at the additions shown by me on Plaintiff's Exhibit No. 887, I took the book additions for the last seven months of 1923 and eliminated from them such items as had been included in the June 1, 1923, appraisal, and my amounts of withdrawals shown on this same exhibit consist of the items shown on the books to have been withdrawn during the seven months period, priced at the appraisal prices. Assuming that those items were in our appraisal, some of those items which are shown on the books as having been withdrawn since June 1st, were actually not in my appraisal. Those that are in my appraisal are shown as withdrawals at the appraisal price.

The items aggregating $62,729.45 shown on the Reconciliation of Additions to the 21st Street Plant represent construction in progress at that plant on June 1, 1923. That was work in progress as of June 1, 1923, and the items were not included in the appraisal and these payments have been made previous to June 1st 1923 on the company's books. I think there is still some work of rearrangement now in progress at the 21st Street plant, but I am not quite sure. If it is not included in the amount shown by me as additions, namely, $1,303,787.76 that is only the additions to December 31, 1923, and any work subsequent to that date is not shown. There might be some progress payment in that million dollars on some work
[fol. 2539] not quite finished, but I do not know whether there are any progress payments there on incomplete work as of this date or not. The purpose of my exhibit is to bring up the appraisal value of the property to and including December 31, 1923, that is to say, the used and useful

property as of December 31, 1923. It is not a fact that if my figure of one million and some odd includes construction in progress since June 1, 1923, that since June 1, 1923, I have included something there that should not be there. I am not able to identify those items in any way on any work sheet I have here or any data that I have here. Exhibit No. 821 indicates the payments to December 31st.

[fol. 2540] Redirect examination by Mr. Ransom:

With respect to property which was inventoried and included in my appraisal as of June 1st, 1923, but was withdrawn from that date up to December 31st, 1923, whether I took out the full amount at which it was included in the June 1st appraisal, that refers to two things. In the 14th Street and 42nd Street, I did. In the minor items of property which were replaced by other items which carried only parts of the overheads, I took out such overheads as would be properly charged to the new pieces of property which went in and as to additions, I took the additions from June 1st, 1923, to December 31st, 1923, so far as they were paid for up to December 31, 1923, and so far as the payments did not relate to property which was installed prior to June 1st, and therefore, included by me and one thing more, there were certain items of property which I did not get in my appraisal and yet on which payments had been made previous to June 1st. I included those payments made previous to June 1st on property subsequently delivered but which was not in my appraisal. If property had been installed, or work on property had gone forward to some extent on December 31, 1923, but no payments on account of it, it would not appear on my statement of additions. I have taken only the actual additions as far as paid for on December 31st, 1923.

[fol. 2541] New York, June 25 and 27, 1924.

Met pursuant to adjournment.

WALTER C. PHELPS, called as a witness in behalf of the plaintiff, being duly sworn, testified as follows:

Direct examination by Mr. Goetz:

I am assistant secretary of the Standard Gas Light Company, and have been such assistant secretary approximately fifteen years.

(The witness testified to having supervision and direction of the accounts and accounting forces of the Standard Gas Light Company, and he identified, as books kept in the regular course of business, various books of account of the Standard Gas Light Company, covering all its operations subsequent to January 1, 1922, which were received in evidence, and marked, respectively, Plaintiff's Exhibits Nos. 903 to 913.)

GEORGE MCCORMICK, called as a witness in behalf of the plaintiff, being duly sworn, testified as follows:

Direct examination by Mr. Ransom:

I am general accountant and auditor of the Northern Union Gas Company, and have been connected with the Company about twenty-five and one-half years.

(The witness testified to having supervision and direction of the accounts and accounting forces of the Northern Union Gas Company, and he identified, as books kept in [fol. 2542] the regular course of business, various books of account of the Northern Union Gas Company, covering all its operations subsequent to January 1, 1922, which were received in evidence, and marked, respectively, Plaintiff's Exhibits Nos. 914 to 928.)

GEORGE LANGE, called as a witness in behalf of the plaintiff, being duly sworn, testified as follows:

Direct examination by Mr. Goetz:

I am assistant secretary of the New Amsterdam Gas Company, and am auditor of the East River Gas Company of Long Island City. I have been auditor since December, 1917, and was appointed acting-auditor in August, 1908.

(The witness testified to having supervision and direction of the accounts and accounting forces of the New Amsterdam Gas Company and the East River Gas Company of Long Island City, and he identified, as books kept in the regular course of business, various books of account of the New Amsterdam Gas Company and the East River Gas Company of Long Island City, covering all their operations subsequent to January 1, 1922, which were received in evidence, and marked, respectively, Plaintiff's Exhibits Nos. 943 to 966.)

LOUIS H. WERNER, called as a witness in behalf of the plaintiff, being duly sworn, testified as follows:

Direct examination by Mr. Goetz:

I am vice president and secretary of the Central Union [fol. 2543] Gas Company, and was made secretary in 1907 and vice president in 1913.

(The witness testified to having supervision and direction of the accounts and accounting forces of the Central Union Gas Company, and he identified, as books kept in the regular course of business, various books of account of the Central Union Gas Company, covering all its operations subsequent to January 1, 1922, which were received in evidence, and marked, respectively, Plaintiff's Exhibits Nos. 929 to 942.)

GEORGE W. PARKHURST, called as a witness in behalf of the plaintiff, being duly sworn, testified as follows:

Direct examination by Mr. Goetz:

I was vice-president and secretary of the New York Mutual Gas Light Company, having become secretary on May 19, 1910, and vice president on February 20, 1917, and held those positions until August 31, 1922, when the plant, distributing system and certain property of the Mutual Company were sold to the Consolidated Gas Company.

(The witness testified to having supervision and direction of the accounts and accounting forces of the New York Mutual Gas Light Company, and he identified, as books kept in the regular course of business, various books of account of the New York Mutual Gas Light Company [fol. 2544] covering all its operations subsequent to January 1, 1922, which were received in evidence, and marked, respectively, Plaintiff's Exhibits Nos. 967 to 974.)

[fol. 2545] New York, June 30, 1924.

Met pursuant to adjournment.

(Plaintiff's Exhibits Nos. 891, 892, 899 and 900 for identification, received in evidence and marked respectively, Plaintiff's Exhibit Nos. 891, 892, 899 and 900.)

FRANK H. NICKERSON, a witness in behalf of the plaintiff, recalled.

Direct examination by Mr. Ransom:

Referring to Plaintiff's Exhibit 891 and 892 in evidence, which show the cost of production and distribution of gas by all of the companies on the transfer system, showing the same as the combined statement for each of the years 1923 and 1922, I have the detail of the costs for each of the companies for the respective years, namely, the New Amsterdam, East River, Central Union, Northern Union, Standard and the New York Mutual Company.

[fol. 2546] (Report of the engineering division of the Public Service Commission, consisting of report made by C. R. Vanneman, chief engineer of the Commission, dated August 8th and 9th, 1922, and report of R. H. Nexsen, deputy chief engineer, dated August 4, 1922, as referred to in the order of the Public Service Commission dated August 17, 1922, in the matter of the transfer of certain property by the New York Mutual Gas Light Company to the Consolidated Gas Company, Public Service Commission Case No. 680, Plaintiff's Exhibit No. 199, were received in evidence and marked Plaintiff's Exhibit No. 975.

The report of the accounting division of the Public Service Commission made by Walter J. Fitzpatrick, deputy chief, dated August 14, 1922, in Public Service Commission case No. 680, referring to the same matter as Plaintiff's Exhibit No. 975, was received in evidence and marked Plaintiff's Exhibit No. 976.)

Plaintiff rested.

Mr. Chamberlain: Then I make a motion to dismiss upon the ground that in this case it is neither alleged nor proved that at any time since Chapter 899 of the Laws of 1923 was passed has the plaintiff made an application to the Public Service Commission for a reduction in the thermal content [fol. 2547] of gas to be furnished below the thermal content prescribed by said statute.

The Master: Motion denied.

Mr. Chamberlain: Exception.

Mr. Donnelly: And you deny my motion to dismiss likewise?

The Master: Yes.

Mr. Donnelly: Exception.

[fol. 2548] New York, July 10, 1924.

Met pursuant to adjournment before James G. Graham, Special Master.

Same appearances:

MARTIN McHALE, called as a witness in behalf of the defendants, being duly sworn, testified as follows:

Direct examination by Mr. Donnelly:

I have been engaged in the Real Estate business the past 34 years with an office at 55 Cedar Street for the past 20 years. During this period I have appraised property in various sections of the City of New York comprising various kinds of property which includes land and improvements thereon. Some of the institutions and law firms are as follows:

U. S. Mortgage & Trust Co.,
Lawyers Title Ins. & Trust Co.,
Lawyers Mortgage Company,
Guaranty Trust Company,
Empire Trust Company,
Central Union Trust Company,
Liberty National Bank,
American Exchange Nat'l Bank,
Equitable Trust Company,
Mutual Life Ins. Co.,
Banking Dept. of State of New York,
Banking Dept. of State of New Jersey,
[fol. 2549] U. S. Government,
Estate of John Jacob Astor,
Estate of William Waldorf Astor.

I might add I have appraised for almost all the financial institutions in the City. I have appraised for many law firms among which are:

Davies, Auerbach & Cornell,
Parker, Marshall & Auchencloss,
Baldwin & Baldwin,
Winthrop & Stimson.

I have also appraised the following property:

All of the Consolidated Gas Company's property in the Borough of Manhattan.

Property owned by the New York City Railway Co. in the Borough of Manhattan.

All of the New York Telephone Company's property in the five boroughs.

Property taken for the extension and the improvement of Bellvue, between 28th and 29th Streets, 1st Ave to bulkhead line.

All of the property between 36th and 37th Streets, 1st [fol. 2550] Avenue and 2nd Avenue, Borough of Manhattan.

All of the property between 155th and 156th Streets from 8th Avenue to bulkhead line.

The Billings property situated on Ft. Washington Avenue.

The Bennett Estate Building situated on Ft. Washington north of 181st Street.

Widening of Fordham Road from 3rd Ave. to Harlem River Terrace.

Knickerbocker Building, Broadway and 42nd Street.

Metropolitan Opera House, 40th St. and Broadway.

Macy Building, 34th St. and Broadway.

The Osborne, 7th Avenue and 57th Street.

All of the property taken for the New Municipal Building bounded by Park Row and Center Street.

Produce Exchange Building, Whitehall Street.

The Johnson Iron Works property at Spuyten Duyvil.

List of Appraisals of Waterfront Property.

Borough of Brooklyn:

All of the New York Dock Company's property from Catharine Ferry to the Erie Basin, including Piers, Bulkheads, Warehouses and Upland and Railroad Track.

All of the property from 26th to 38th Street, taken by the City of New York, known as the Cutting property.

The property from 39th to 40th Street, taken for ferry purposes.

All of the property from 59th to 63rd Streets, Bay Ridge.

Wakeman Place, from 65th to 67th Street, Bay Ridge.

All of the property from 5th Street to 37th Street from Surf Avenue to pierhead line, Coney Island.

Property taken by the City for Barge Canal at the junction of the East River and Newtown Creek, 1,500 feet on the river, which included piers and upland, &c.

Whale Creek property, taken by the City of New York for a market.

Broadway Ferry property at the foot of Broadway, Williamsburg.

Piers and bulkhead at the foot of Oak Street, Williamsburg.

Greenpoint Ferry property at the foot of Greenpoint Avenue.

Property taken by the City at the foot of Harsell Street, in the Borough of Queens.

Also the Bradley property, taken by the Barge Canal, in the Borough of Queens.

Astoria Ferry, foot of Astoria Avenue, in the Borough of Queens, taken by the City of New York.

The property taken for East River Park, from Hoyt Avenue to Ditmars Avenue, a distance of about 3,000 ft.

[fol. 2551] Borough of Manhattan:

Piers 2, 3, with bulkheads; piers 9 and 10, with bulkheads, piers 11 and 12; piers 13, 14, 15, 16 and 17 with bulkheads; piers 18, 19, 20 and 21 with bulkhead; piers 23 and 24 with bulkheads; piers 27 and 28 with bulkhead; piers 32 and 33 with bulkhead; pier 36 with bulkhead; pier 49 with bulkhead; piers 50, 51 and 52 and 53 with bulkheads; bulkhead from Jackson Street to Corlears Street; piers 56 and 57 with bulkheads; bulkhead at foot of Houston Street to Third Street, from 8th Street to 9th Street, with uplands and improvements; bulkheads from 14th to 18th Streets; bulkheads from 26th to 31st Street, including upland and improvement; bulkheads from 35st to 36th Street, with improvements; from 99th to 101st Street bulkheads, land under water with upland, 120th Street from Harlem River, from 135th to 138th Street, land under water bulkheads; from 138th to 139th street, land under water bulkheads, upland, etc.; from 148th to 150th Street, land under water and upland; from 155th to 156th Street, land under water, bulkhead and upland, etc.

North River:

Piers 8, 9, 10 and 11 with bulkheads: bulkhead rights from 16th to 18th Street on Hudson River, from 41st to 42nd Street bulkheads, land under water and upland from 42nd to 43rd Street, land under water and upland, from 44th to 50th Street bulkheads, land under water with upland, from 130th to 141st Street, land under water and upland, at the foot of Dyckman Street, including land under water, ferry houses, &c.

On Staten Island Shore:

All of the property taken from Arietta Street down to the Pouch piers, a distance of about a mile and a half, taken from the City of New York, down a ship-building property on the Kill von Kull, which included land under water, upland, etc.

All of the Consolidated Gas Company's property in the Borough of Manhattan, which included land under water, upland, piers and bulkheads. Also on the Jersey shore at Shadyside, about a mile on the waterfront. All of the Metropolitan Street Railway property, which included land, waterfront, upland, etc., and various other appraisals in the Greater New York.

I also have been consulted and have appraised properties in the following out-of-town cities:

Seattle, Washington, Tacoma, Portland, Oregon, Chi- [fol. 2552] cago, Illinois, Charleston, S. C., Norfolk, Va., Savannah, Ga., Philadelphia, Boston, Newark, Jersey City, Bayonne, and many others.

I am familiar with the lands described on sheets 1 to 21 inclusive, of Plaintiff's Exhibit No. 258 and with the lands described on the several sheets of Exhibits 259, 261, 264, 265, 850, 851, 852, and 853 and have seen these sheets of the exhibits before, have you? I examined them all. I am and have been familiar with the values of real estate in the vicinity of the lands described in the sheets of the exhibits. I have kept myself informed as to the sales, leases, mortgages and other transactions relating to real estate in the part of the City of New York in which the lands shown

on the sheets of the exhibits mentioned are located. At the request of the defendant Attorney General I made an appraisal as of June 1st, 1923, of the lands described on the sheets of the several exhibits referred to. In connection with my appraisal I personally visited each parcel of land described on the sheets of these exhibits. Those visits were made at various times during the year of 1923 and also as late as 1924. Prior to those visits, I had examined the greater part of those properties twice and testified to their values. That was for the year 1906, my best recollection, I think it was 1907 or 1908 when I testified.

I formed an opinion as to what was the market value on or about June 1st, 1923, of the lands unimproved shown on the sheets of the exhibit to which reference has already been made. In arriving at my opinion of the value of these different parcels of land I adopted the areas shown in either blue or in pink tint on the sheets of these exhibits, [fol. 2553] with the exception of the parcel situated between 12th and 13th Streets, that would be to the bulkhead line. I am referring to Block 369, Lot 1, which is shown on sheet No. 2 of the set of diagrams known as Plaintiff's Exhibit 258. I prepared a schedule setting forth what was the value on or about June 1st, 1923, of each parcel of land unimproved as shown on the sheets of these exhibits.

The schedule which you now show me sets forth as to each parcel of land my opinion of its value unimproved on or about June 1, 1923, and I have listed each parcel by block and lot numbers and locations and then by value, and that applies to the properties of the Consolidated Gas Company, the properties of the Astoria Light, Heat & Power Company, and also certain properties owned by the Standard Gas Light Company and the New Amsterdam Gas Com- [fol. 2554] pany, the properties of which two last named companies as shown in Plaintiff's Exhibits 261, 264 and 265, and also the properties of the East River Gas Company shown on Exhibits 850 to 853, inclusive.

The property, which I took in Block No. 369, which is shown on Sheet No. 2 of Plaintiff's Exhibit 258, is bounded on the north by 13th Street having a distance of 415 feet on the south, by East 12th Street 500 feet, and on the east by the westerly side of Tompkins Street 218 feet, and on the west by Avenue D, 206.6 feet, containing 94,474 square feet.

By Mr. Ransom:

That is what I valued.

By the Master:

My distance- from east and west are taken from Avenue D to the westerly line of what is known as Tompkins Street.

By Mr. Donnelly:

In valuing the property embraced in Block 369, shown on Sheet 2 of Plaintiff's Exhibit 258, I have not included in my [fol. 2555] valuation any property lying east of the westerly line of Tompkins Street, and in valuing the property embraced in Block 369, I have not included any value of the bulkhead rights in the slip on the northerly side of Block 369. I took Tompkins Street as existing seventy-five feet west of the established bulkhead line. This is the established bulkhead line (indicating on map). I took Tompkins Street to be seventy-five feet wide. There on an angle, but it is seventy-five feet on a straight line, west of the established bulkhead line. On Sheet No. 2 of Plaintiff's Exhibit 258 the slip is the portion that lies north of the filled-in land in width about twenty-five feet by 239 feet to the bulkhead line.

Consolidated Gas Company

Appraisal of Martin McHale

Valued of Land Unimproved as of June 1, 1923

Summary

Block	Lot	Value
239	1-5	$148,500 00
368	1	435,650 16
369	1-10-11-12-13-15	398,030 12
382	22	302,449 40
870	47-60	425,480 00
951	35	53,433 60
952	7-29, 30-35	358,041 40
953	1	461,340 00
978	5-6	418,148 28

Block	Lot	Value
979	1-27	523,461 40
982	13	321,370 72
985	7-19-20	228,800 00
987	37	130,879 94
988	1	464,860 06
989	16	146,529 90
989	1	184,002 50
991	1	263,969 84
991	47	445,220 00
		$5,310,158 26

[fol. 2556]

1028	38	$531,520.00
1089	1	1,289,725.00
1090	23	118,800.00
1092	16	290,114.88
1093	9	345,642.00
1157	1	858,880.00
1177	21	337,167.60
1456	17	169,200.90
1457	17	175,602.24
1457	6	170,118.08
1475	1	45,031.38
1482	27	50,697.15
1642	33	48,400.00
1670	1	386,100.00
1682	8-11	330,000.00
1683	18	77,000.00
1692	1	222,224.64
		$5,446,223.87

1704	5	329,332.96
1712	2	72,005.70
1978	37	123,200.00
1998	50, 53, 54, 55, 56	61,600.00
1999	1	200,200.00
2108	23	19,800.00
2497	132	200,640.00
2583	450	5,000.00
3236	1	199,500.00

	Value
Hunts Pt.: 2770, 2775, E. F. G. H. 2777-J 2781-2776-2778 2780	2,160,000.00
Astoria: Blocks 849-I 850-I 859-I 860-I 870-I 871-I 881-I 882-I 893-I 894-I 895-I	4,173,320.00
357 1 (part of)	2,000.00
850 2	761.00
	$7,547,359.66

On Block 239, Lots 1 and 5, which is the property of Hester Street and Elizabeth Street, the improvements consisted of practically four buildings, one fronting on Hester Street 60 by 88 by 48 feet high, and then there is another one 20 by 28 by 85. Then on Elizabeth Street there were [fol. 2557] two other buildings. The Hester Street Buildings was formerly the Quaker Church. The others were formerly erected for a furniture factory. Those improvements added $100,000 to the value of the land on which they stood on June 1, 1923.

Referring to Block 870, Lots 47 and 60, which is the property at Irving Place and East 15th Street, the main building is 19 stories high, fireproof building throughout, occupied entirely by the Consolidated Gas Company and subsidiary companies. The building was in excellent state of repair from top to bottom. The main floor was used for show rooms. Above the main floor it was used for various offices.

With respect to the other building known as the Annex that was a three story building. The dimensions were 25 feet 5 inches by 84 by 48 feet high, used practically by the gas company. These improvements added to the value of the land on which they stood on June 1, 1923, that is, the main building, in my opinion, $3,575,529.60, and the Annex $45,552.

The improvements on that land, Block 1028, Lot 38 on June 1, 1923 which is the West 57th Street building, were a three story and basement brick fireproof building. The main floor was used for show rooms. It was fully occupied, and in excellent state of repair. Those improvements added to the value of the land as they stood on June 1, 1923, $340,800. I saw that building about a month ago. I went

through it. The third story of that building was used for storage of lamps and various other material that is used by the gas company. I do not think I visited that building on more than one occasion.

As to Block 1642, Lot 33, which is the northwest corner of [fol. 2558] Third Avenue and 114th Street, the Third Avenue front, there was a three story and basement building, and the main floor was used for show rooms, and the basement was occupied, it was fully occupied. On 114th Street there was a three-story brick building erected about twenty-five years ago, practically used for the same purpose. It was entirely devoted to gas purposes—store rooms and bookkeeping departments and various departments used in connection with the gas company. My first visit there to that property was some years ago in the old case, in 1906. My last examination was, I should say, a month or two months ago. The third Avenue one was the ordinary brick and frame construction, and old time building. The 114th Street building was rather a substantial building, much more modern than the Third Avenue, that was brick; a non-fireproof building. The improvements on that block and lot added to the value of the land on which they stood on June 1, 1923, $82,219.50.

Cross-examination by Mr. Ransom:

I have appraised for the Banking Department of the State of New York, during the years 1908 to about 1913 at the request of the Superintendent of Banks, Clark Williams, I think, was at that time Superintendent. I was employed by Mr. Williams, only to make appraisals throughout Greater New York, and some in Brooklyn, Manhattan and the Bronx; all over. I have not make any appraisals for that department since 1913 or 1914. I do not remember the time when I made the appraisal at the request of Henry Mandell. He was a private banker on Rivington Street. I was employed by Mr. Mandell, only to make appraisals. That was about the time the private bankers were being put under the jurisdiction of the State Banking [fol. 2559] Department. I said about that time. My appraisal was not being made in connection with that function of taking over the supervision of private bankers by the State Banking Department. I do not think that my only

connection with the State Banking Department was that I made an appraisal for the purpose of Mr. Mandel's application to obtain a certificate from the State Banking Department. My best recollection is that it was more or less in connection with some failure that I made an appraisal. It was about the time Mr. Mandell failed to get the certificate on the basis of your appraisals. I think his bank was closed at the time I made the appraisal. That was at the time that the proceeding was taking place against him in the criminal court. I testified in that proceeding. I never appraised Mandell's property for the Banking Department or for submission to the Banking Department. I [fol. 2560] appraised it entirely for Mr. Mandell. The bank was closed, I am positive of that. I made no appraisal for Mr. Mandell until his institution had been closed. I did testify for him on the trial.

I am appraiser for the United States Mortgage and Trust, and have been for thirty years; did all their appraising in the East. This company loaned a great deal of trust funds in the City of New York. I did not know how much they have loaned in the City of New York in a year. They loan quite some but that is none of my business. I pay no attention to it. I simply do what they tell me, make an appraisal and send it in, and I do not know what is done with the appraisal after I send it in. They make loans in the City of New York each year; trust funds, but I have no idea as to how much.

I appraised the following pieces of property for the City of New York: property owned by the New York City Railway Company in the Borough of Manhattan, the Telephone [fol. 2561] Company's property in the five boroughs; and the Billings property on Fort Washington Avenue. I appraised all of the property of the Consolidated Gas Company once for the Consilidated Gas Company and then again for the City of New York, in the prior proceeding in 1906. I was not a witness on either side in the 1919 litigations. The widening of Fordham Road from Third Avenue to Harlem River Terrace I appraised for the City of New York. The property taken for the New Municipal Building at Park Row and Center Street, I appraised for the City of New York. The Macy Building at 34th Street

and Broadway, I appraised for Mr. Celler, a lawyer, or a law firm here in New York. The Johnson Iron Works property, I testified for Johnson Bros. The property between 35th and 36th Streets, First and Second Avenues, in the Borough of Manhattan, for Young Brothers, the owners. That was seven or eight years ago, and was a private appraisal. The Produce Exchange Building, I think was made for the City of New York, quite a number of years ago. The property taken for the extension and improvements of Bellevue between 28th and 29th Streets, First Avenue to the Bulkhead line, was for the City of New York. The property between 155th and 156th Streets from Eighth Avenue to the bulkhead line, was for the Eighth Avenue Railroad; I was employed by the railway company in that case for the purpose of condemnation. It related to the block between 155th and 156th Streets from Eighth Avenue to the bulkhead line. The Eighth Avenue Railroad was condemning the property. I think it was owned by the Coogan Estate.

I appraised the Bennett Estate Building at Fort Washington Avenue about three years ago, I think, for the City [fol. 2562] of New York. As the Bennett Estate Buildings, the buildings should be omitted from my prior description, because there were no buildings on it at the time. It was a large vacant tract of land north of 180th Street to Fort Washington Avenue. I did not testify in that proceeding. That was an appraisal made for the United States Mortgage & Trust Co. The Knickerbocker Building I appraised for the owner, and my best recollection, in 1922. I think it was a certiorari. I testified in it.

The Metropolitan Opera House at 40th Street and Broadway, I appraised quite a number of years ago. I should say eight or ten years ago for the purpose of Certiorari proceedings. I was employed by the owners who were seeking a reduction in amount.

The Osborne Property at Seventh Avenue and 57th Street was a private appraisal for the United States Mortgage and Trust Company. I appraised that twice. I think the first time was about ten years ago and the other about five years ago; not since that time. I never testified with reference to that parcel or that property.

The Produce Exchange Building appraisal was a certiorari. I testified in behalf of the owner seeking a reduction in amount. That was quite a number of years ago. I should think six or seven or eight years ago. I have finished my testimony in the Johnson Iron Works proceeding at Spuyten Duyvil in April of this year. Congressman Boylan was also a witness in that proceeding against me. I appeared for Johnson. He appeared for the State. [fol. 2563] I appraised New York Dock Company's property two or three times, about two years ago. I appraised it for the United States Guaranty Trust Company and then again I appraised it for the New York Dock Company in various proceedings. That was about two years ago, when I made the last appraisal for them. That was testified to by me, in the Montague Street proceedings for the firm of Davis, Auerbach & Cornell. That was a condemnation proceeding, where the City sought to acquire an easement.

I did not testify as to the property from 26th to 38th Street, taken by the City of New York. I appraised it for the City of New York. That was a good many years ago, I think about 1908.

I appraised the property from 39th to 40th Street, taken for ferry purposes; that was eight or ten years ago. I testified for the various owners. That was a condemnation proceeding.

The 59th to 63rd Street Barge property was appraised by me seven or eight years ago for the City. I testified in those proceedings. It was for a condemnation.

The Wakeman Place, from 65th to 67th Street, Bay Ridge, was appraised by me in 1922 or 1923 for the City of New York for condemnation.

The property from Fifth Street to Thirty Seventh Street, from Surf Avenue to the pierhead line, Coney Island, was appraised by me for the City of New York. I think I finished there in 1922 and I testified in those proceedings for the City. The property taken by the City for the Barge [fol. 2564] Canal, the junction of the East River and Newton Creek, 1,500 feet on the river, was taken by the State and if my testimony said it was property taken by the City it was in error. On that property, I testified for the owner. That was somewhere to the best of my recollection, 1916 or thereabouts.

I dictated this statement of qualifications and list of appraisals but I did not examine it. I did not look it over afterwards.

The Whale Creek property, taken by the City of New York is over in Bay Ridge. I did not testify in that proceeding; I just made it. That was preliminary to a condemnation proceeding. I acted for the City of New York. I did testify as to the Broadway Ferry property at the foot of Broadway and Greenpoint Avenue and Broadway, for the City of New York. As to the piers at the bulkhead in Williamsport, I did not testify; that was for an individual. I did not testify in the proceeding of the Greenpoint Ferry property at the foot of Greenpoint Avenue, for the City of New York. I testified in the proceeding as to the property taken, by the City at the foot of Harsell Street, in the Borough of Queens for the City of New York about 1918. As to the Bradley property, taken for the Barge Canal, I represented William Bradley and did not testify. I first appraised it, I think, about 1916, and the compromise was made by the City in 1918, to the best of my recollection.

I represented the City of New York in the proceeding as to the property taken by the City at the foot of Astoria Avenue in Queens, at the so-called Astoria Ferry and testified. That was about 1921 and was in condemnation.
[fol. 2565] I testified for the City in the proceeding of the property taken for the East River Park from Hoyt Avenue to Ditmar Avenue. That was quite a number of years ago, I should say 1912 or 1913, somewhere around there.

The long list of properties in the Borough of Manhattan covering various piers and bulkheads were mostly all properties that I testified in respect to in behalf of the State of New York. I think they all are. As to the property in Staten Island, the Kill von Kull was for individuals; from Arietta Avenue to Simonson Avenue was for the City of New York; I think we finished that about 1923 and commenced about 1919. I did testify in that proceeding, which is not yet closed.

The Metropolitan Street Railway property including some waterfront and upland, was for the City of New York. That was quite a number of years ago—I should

say 1912 or somewhere around there. I have been consulted about and appraised properties in various out-of-town cities. Those are in relation to waterfront upland. That is, in Seattle, Washington, Tacoma, Portland, Oregon, Chicago, Illinois, Charleston, South Carolina, Norfolk, Virginia, Savannah, Georgia, Jersey City, Bayonne, all were done for the United States Government during the war, but my reference is here to the appraisal of waterfront properties, that is bulkhead and upland, in those cities, during the war period and since.

Referring to Block 239, Lots 1 and 5, on which I placed a value of $148,500, my units for my valuation on this appraisal was $18,000 inside lot, on all of the lots on [fol. 2566] business streets. I have not bought or sold any property in that vicinity during the last three or four years. I might say, that my business is entirely in the appraisal of property there, that is, I have not bought or sold parcels in the region of any of these properties, that is, for a good many years. My business is only appraising. I front all of those lots on business streets. I took into account for plottage an allowance of 10 per cent. and for corner lots, 50 per cent. In my computation of this figure for lots 1 and 5 on Block 239, I have taken the corner at Elizabeth and Hester Streets, $18,000 plus 50 per cent or $27,000. I have taken the six lots fronting on the other street at $18,000, $108,000, which makes $135,000, plus 10 per cent plottage, $13,550, making a total for the lots of $108,300, making a grand total for that land of $148,500. I knew of the sale in September, 1919, of the property at 44 Elizabeth Street for $22,000; that was improved and included buildings. It was less than a hundred feet, and was 25 by 55 feet. I pay very little attention to assessments. I did not know that 44 Elizabeth Street property was assessed for $15,000 for land and buildings at that time. If I paid any attention to that assessment I would not give you half of that. The land unimproved of this property is assessed in 1924 for $145,000. I made $148,500. I did not know that unimproved land alone at No. 44 Elizabeth Street at the time of this sale was assessed for $11,000; it would not surprise me. I very seldom notice assessments. I do not know what was the character of the buildings on the property. They are "old timers"; cold water tenements.

In reaching my valuation of these lots 1 and 5 in Block 230, fronting on Elizabeth Street at the corner of Hester, [fol. 2567] I did not take into account the fact that the property at No. 44 Elizabeth Street sold for approximately nearly 50 per cent in excess of the assessed value. I did not know what the assessed value was. No. 84 and 86 Elizabeth Street are new law tenements. Those two lots had a frontage of practically 50 ft. I did not know that this property in 84 and No. 86 Elizabeth Street was assessed for $70,000 at that time. I did not pay any attention to assessments at all. I knew that it sold for $76,000. I gave it such weight that I believed it was entitled to. That abutted this company's property. That was a different character of property. It was a tenement property. I did not apply it in any way.

I knew of the sale in July, 1923, of the northwest corner of the Hester and Elizabeth Streets, which is the opposite corner from the gas company's property. That is a short lot. I knew that that property sold in July, 1923, for $28,500, and that is practically what I allowed. I did not know that the tax assessment at the time of the sale was $20,500 of which $16,500 was for land. I paid no attention to the assessment. I did not take into account that this was about 40 per cent. I allowed $200,000 and that was assessed for $70,000, up in the Bronx.

I knew that No. 54 and 56 Elizabeth Street in 1923, a parcel 74 ft. 6 inches by 88 feet sold in 1923 for $135,000 and I gave it such weight as I thought it was worth in reaching my valuation. I did not know at the time it was assessed for $105,000 of which $52,000 was for land. I applied the sale by saying it was not applicable and just dismissing it. I gave no weight at all to the fact that this prop- [fol. 2568] erty in 1923 sold for an amount approximately 30 per cent in excess of the assessed valuation. I did not know what the assessed value was. I do not give any weight to assessed valuation under any circumstances and that applies to all of these properties. I think that weight should be given to it, but I did not. It is an individual opinion.

I did know that the sale in March, 1923, of the northwest corner of Canal and Elizabeth Streets amounted to $73,500, that is an entirely different location and has no bearing on

this property, in my opinion. I do not know what the assessment of it was. I did not know that this property at Canal and Elizabeth Streets, in March, 1923, which was assessed for $41,000 sold for $73,500. I did not take into account, in fixing my value of this property on Elizabeth Street at the corner of Hester, that this lot at the corner of Elizabeth and Canal sold in March, 1923, for 80 per cent more than the assessed valuation.

I do not think I remember that sale known as No. 75 Elizabeth Street, 20 feet front and 47 feet deep, July of 1923. Seventy-five Elizabeth Street is immediately opposite the company's property. I did not know of that sale. I did not take into account, or know, the assessed value of that land at that time.

I knew of the sale in April, 1921, of the property at 82 Elizabeth Street for $43,200; that was a six story tenement, a lot 25 feet by 100 feet 8 inches. I did not know that this property was assessed at the time of the sale for $33,000, of which $17,500 was land, or that it sold for $43,200. I applied that sale of this property at 82 Elizabeth Street to my valuation of the Gas Company's property as I knew what it was, what it sold for. The building itself is worth between about $22,000 to $25,000—about $25,000 [fol. 2569] and the land would be worth about $18,000. I did not take into account the fact that this property sold for more than thirty per cent in excess of the tax assessment.

I did not know of the sale in May, 1929, of No. 90 to 94 Bowery, for $145,000. I did not take in the Bowery sale at all. I have a record of all the sales, but I did not take it into consideration for I considered Bowery property had no bearing upon Elizabeth Street. That Bowery property immediately adjoins this gas company's property to the east. I think this 82 Elizabeth Street property was a part of this present parcel. I do not know that part of the present parcel sold for more than thirty per cent in excess of the tax assessment. I don't remember whether this 90 to 94 Bowery was a property 74 feet 8 inches by 100 feet deep for I did not use the Bowery at all as a fair criterion of values on Elizabeth Street. I certainly did not and would not give it any weight at all or take it into account

in any way, and if it sold for 20 per cent in excess of the tax assessment I did not give that any weight in any way whatsoever.

I did not know of the sale in December, 1922, of 173 and 175 Hester Street for $102,000, so I did not take that into account in any way.

I fronted all these lots in Elizabeth Street. Very little difference in the units on Elizabeth Street at that point than at Hester Street at that point, but whatever difference there is would depend upon circumstances. I divided the lots in my opinion to the best advantage for improvement. On Hester Street you had 100 feet; on Elizabeth you had 175, and I fronted them on the street that you had the [fol. 2570] greatest frontage on. If I had fronted on Hester Street the lots which would extend along Hester Street for 100 feet frontage, then I would give a less valuation on Elizabeth Street. I have $2,000 higher than Plaintiff's own experts on Elizabeth Street, Mr. Huntley and Mr. Stevens. They were $16,000 and I am $18,000. By that I mean that I have given to all of the lots on Elizabeth Street a figure which is higher than they gave, or one of them gave, with respect to such of the lots as they deemed could advantageously be fronted on Elizabeth Street. My figure is, not as a whole, higher than theirs for this property. I know Mr. Huntley's was higher than mine, and that Mr. Stevens' figure was $175,000, that is giving $25,000 for the four lots on Hester Street; that is, they reached their figure by fronting four lots on Hester Street and then giving the remaining lots on Elizabeth Street an Elizabeth Street unit price, and I reached my figure by fronting all of these lots on Elizabeth Street and giving what I considered an Elizabeth Street unit price. I do not know anything about the assessments of the City of New York on these lots on a Hester Street frontage. I have not considered it. I did not even ascertain that fact. I am not able to tell from my records.

This lot 82 Elizabeth Street is 109 feet deep, I think. I gave very little additional value for the nine feet. I had it in mind but I do not think that I gave any certain value—it adds. It would certainly not be a detriment. It would be an advantage if anything.

By the Master:

As a whole, I do not think it would make any difference in my valuation of the parcel if I faced four lots on Hester Street 100 feet deep and the remainder of the parcel on Elizabeth Street, because if I fronted them on Hester Street [fol. 2571] 100 feet, it would depreciate in my opinion the lots on Elizabeth Street.

By Mr. Ransom:

Taking up the next parcel Block 368, Lot 1, my unit for a lot on Avenue D was $8,000 per lot, plus 30 per cent for the corners. On 11th and 12th Streets my unit was $7,500 and on Tompkins Street was $10,000 plus 30 per cent for the corners. The easterly side of Tompkins Street is physically opened at that location and used. I took into account for plottage 10 per cent. I have given all of my factors on that computation. I have taken two corners on Tompkins Street, which I have divided here as a matter of convenience, at $8,000 plus 20 per cent would be $20,000 for Avenue D, the 2 first corners. I took lots 2 to 7, which front on Tompkins Street, six inside lots at $8,000 each, $48,000. I have taken thirteen lots on 12th Street at $7,500 each, $97,500; and the same on 11th Street, thirteen lots at $7,500, $97,500. Then the lots fronting on Tompkins Street, I have divided it for convenience—that is Lots Nos. 35 and 42, $10,000 a lot, plus 30 per cent for the corners, would be $43,565.60.

By the Master:

Tompkins Street I have given at the rate of $4 per square foot or $10,000 per lot, plus 30 per cent for the corners, would be $43,565.60. I have taken six inside lots at $4 a square foot would be $88,680 making a total of $395,245.60, to which I have added ten per cent plottage, amounting to $39,524.56, which gives me a grand total of $435,650.16.

By Mr. Ransom:

Block 369, Lots 1, 10, 11, 12, 13 and 15 is the one that is [fol. 2572] in dispute. My unit on Avenue D, Block 369, Lots 10, 11, 12, 13 and 15 was $8,000 plus 30 per cent for

the corners, and on the streets both on 13th as extended and 12th Street, was $7,500; on Tompkins Street was at the rate of $10,000 per lot, or $4 per square foot, to which I added ten per cent for plottage. I have given my factors entirely now, with respect to that property.

Block 382, Lot 22, property on 13th Street, the factors in my computation were $8,000 fronting on the Avenue, plus 30 per cent for the corner. Inside lots on the Avenue were $8,000 and the side streets were $7,500 per lot, or $3 per square foot, to which I have added ten per cent for plottage. The value on the Avenue was $8,000; on the side streets was $7,500. I have given all the factors that I have taken into account there.

Block 870, Lot 47 to 60, my unit on Irving Place was $50,000 per lot, plus 50 per cent for corners. My unit for the lots on 15th Street is $25,000 per lot. I now stated all the elements and factors of my computation, and 10 per cent for plottage, and with that addition that covers my elements and factors.

Block 951, Lot 35, there were seven street lots at $7,500 each, or $48,576, plus 10 per cent for plottage, that is $4,857.60, or a total of $53,433.60. Ten per cent for plottage, and with that I have covered my elements and factors of my computation.

Block 952, Lots 7, 29, 30 and 35; owing to the shape [fol. 2573] there, I will have to give that in detail there as I have. For convenience I have divided the lots up into numbers, Lot 1 and 2, containing 2,100 square feet at $3.40 plus 30 per cent for corners. These lots are at Avenue A. That would be $9,282. I have taken 3 and 4, two inside lots, at $3.40 a square foot, $11,900. Those face on Avenue A. I have taken 5 and 6, two lots at $3.40 a square foot, for 3,750 square feet would be $12,784. I have taken Lot 7, which is on the corner of East 21st Street and Avenue, 2,350 square feet at $3.40, or $10,387. On the side streets there are 34 lots at $8,000 a lot, which would be $272,000. On 20th and 21st Streets there are 34 lots, same unit on both streets. Lot 42, I have 2,850 square feet, $3.20 would be $9,138.20. That is on the north side of East 20th Street commencing 100 feet west of the west line of Avenue A and running back 119 feet. It is 94 feet west of Avenue A on 20th Street. The lot that I am referring to now is

25 feet by 119 feet deep containing 2,856 square feet at $3.20, would be $9,139.20 or a total for the block of $325,-492.20, to which I have added 10 per cents plottage amounting to $32,549.20; or a total for the Block of $358,041.40.

I have given all the factors of my computation as to Block 952, Lots 7, 29, 30 and 25. I apply 10 per cent for plottage or size throughout. That is, where I have allowed plottage. I have had it in mind in all cases where there were two or more lots in the same ownership. No separate addition. I had it in mind, though, in the values that I have given, such as acreage property. I have not given [fol. 2574] more than 10 per cent to any parcel, in any part of Manhattan or The Bronx or Queens.

Block 953, Lot 1, my unit of value on First Avenue is $10,000 plus 30 per cent for corners, taking the two corners, which amounted to $26,000. These are the corners, one on 21st Street and First Avenue and also the corner of 22nd Street and First Avenue; plus 30 per cent for the corners would be $26,000. There are six inside lots fronting on First Avenue at $10,000 which would be $60,000. There are 32 street lots fronting on 21st Street and on 22nd Street at $8,000 each, $256,000. There are fronting on Avenue A two corner lots at $9,000 each, plus 30 per cent making $23,400. There are six inside lots on Avenue A at $9,000 each, which would be $54,000; that makes the total of $419,400 to which I have added 10 per cent plottage amounting to $41,940, or a grand total of $461,340. I think both avenues are more valuable than the streets. That is true also as to the parcels concerning which I have previously testified here.

Block 978, Lots 5 and 6—three lots fronting on Avenue A, inside lots, at $3.40 a square foot or $8,500 a lot, $23,460; one corner lot at $3.40 per square foot, plus 30 per cent, $10,166. My total value for the lots is $380,134.80, to which I have added 10 per cent plottage which would be $38,013.48 which makes a grand total for the property of $418,148.28. The figure before I added plottage was $380,134.80; three lots $23,460; fronting on Avenue A, inside lots. One corner lot at $$3.40 per square foot, plus 30 per cent for the corner, would be $10,166; fronting on Avenue A, 23 feet [fol. 2575] by 100, or 2,300 square feet each. The frontage I gave those inside lots was 23 feet by 100, and I divided

the frontage equally into four lots. My unit there on 20th Street and 21st Street is $3.20 per square foot or $8,000 a lot, and for convenience I have taken lots 5 to 22, which is 18 lots. Lot 5 to 22 front on 21st Street. Those are my numbers.

By the Master:

I have taken a unit value on 21st Street of $8,000. My unit there is on both 21st and 20th Street- $8,000 a lot; 25 by half the block.

By Mr. Ransom:

I took 18 lots on 21st Street and 18 on 20th Street. There are that many as I figure it now. The block in question is an irregular block. They do not just exactly come out. There is a typographical error, so I will have to wait until after lunch to give you that. That is, the figure that I have given will have to be changed.

Block 979, Lots 1 to 27; my unit of value on Avenue A is $9,000. There are two corner lots. Those are 24.71 in front by 100 feet deep. That is, I divided the frontage into equal sized lots. Those two lots contained 4,942 square feet, at the rate of $9,000 a lot, plus 30 per cent for the corners, $23,400. I got 2 to 7, inside lots, fronting on Avenue A, containing 14,808 square feet. Lots of the same size, 24.71 by 100. It would be $54,000. That is equal to $9,000 per lot. Then I have 19 lots fronting on 21st Street, the long side, at $8,000 per lot, $152,000. The size of those lots on 21st Street were 25 by half the block, which would be 98.9. I have got 16 lots fronting on 22nd Street at $8,000 a lot, or $128,000.

[fol. 2576] By the Master:

On the Marginal Street, I have two corner lots containing 6,894 square feet at $4.00 per square foot, or $10,000 per lot, plus 30 per cent for the corner, which would be $35,854. One of these lots, on 21st Street, is 185 feet deep, due to the angle on the corner. The other lot is 32 feet frontage by 94 feet deep, on 22nd Street. Then I have six inside lots fronting on the Marginal Street at $4.00 per square foot, or at the rate of $10,000 per lot, which would be $82,620. These

inside lots vary. There is a lot 135 feet deep, 156 feet deep, 107 feet deep, 122 feet deep, 142 feet deep and 164 feet deep. In other words, I took a rear line from 22nd Street to 21st Street and backed all the Marginal lots on that line. I backed the south half of the block on one rear line and the north half of the Marginal block on a rear line further west. That gives me a total of $475,874, to which I added $47,587.40 for plottage, amounting in the total to $523,461.40.

By Mr. Ransom:

That is the way I got the figures I have given as the value of this property. That plottage is 10 per cent that is allowed there. I have given now all of my factors on that; I have covered my computations.

Block 982, Lot 13, I have two corner lots. My unit on Avenue C is $9,000 per lot, per city lot. I have two corner lots amounting to 5,650 square feet at the rate of $9,000 a lot, plus 30 per cent for the corners, amounting to $23,400. Then six inside lots on Avenue C at $9,000 per lot would be $54,000. On 15th Street I have 30,975 square feet or 12 city lots at the rate of $8,000 a lot, which would be $96,000. [fol. 2577] I have one lot also of 34 feet by half the block, or 3,511 square feet at $3.20 per square foot, or at the rate of $8,000 a lot, which would be $11,235.20. I have also got another lot 34 by 101 containing 3,600 square feet. That is on 14th Street, at $3.20 per square foot or at the rate of $8,000 per lot it is $11,520. Then I have got 12 lots on 14th Street at $8,000 per lot, which would be $96,000 giving a total of $292,155.20, to which I have added 10 per cent plottage amounting to $29,215.52, or a total of $321,370.72. That is the way I reached the value of this parcel.

Block 985, Lots 7, 19 and 20, there were 26 lots all told at $8,000 a lot, which would be $208,000 to which I have added 10 per cent plottage, which amounts to $20,000 making a grand total of $228,800. The same unit on 17th and 18th Streets, at $8,000 a lot. These are all my factors on Block 985, Lots 7, 19 and 20.

Block 987, Lot 37, I have taken into consideration the size and dimensions of the property and I have given it one flat rate over all, or at the rate of $4 per square foot, or $10,000 per lot, which would be $118,981.76, to which I have added plottage of 10 per cent, being $11,898.18, or a grand

total of $130,879.94. On Avenue B, I give a flat rate over all, gave the same rate over all, as on the northerly side of 21st Street it is only 84 feet deep. It is based on the square foot basis, $4.00 over all. I had in mind the separate taking into account of the corners but made no separate element of that.

Afternoon Session

By the Witness: I am ready to go on with Block No. 978.

By Mr. Ransom:

My figure of $418,148.28 is correct. On Avenue A I have [fol. 2578] four lots. In other words, 92 feet, by 100, which I have divided into four lots. Three of the lots contain 6,900 square feet at $3.40 a square foot or at $8,500 a lot, $23,460. The corner lot contains 2,300 square feet at $3.40, plus 30 per cent for a corner, $10,166. On 21st Street, or rather, commencing at 20th Street, on 20th Street I have 18 lots and a fraction of a lot which I will explain later. The 18 lots are 25 by half the block, which would be 92 feet. On 20th Street and 21st Street I have 88,504 square feet at $3.20 a square foot, or $8,000 per city lot, that is 36 lots and a fraction of a lot, which would be $283,212.80. There is one lot which is within a hundred feet of Avenue A, which contains 2,760 square feet at $3.20 a square foot. I have added it all together which would be 85,504 square feet in both 20th Street and 21st Street. That lot or fraction of a lot that is thirty feet by half a block. It is within one hundred feet of Avenue A, on the northerly side of 20th Street.

It is thirty feet wide on 20th Street, frontage, by about half the block deep 92 feet, containing 2,760 square feet all told on both 20th and 21st Streets, and I have 88,540 square feet. That is about 36 or 37 lots. I figured it on the square foot basis because some of them were irregular, that is, the lots were less than 100 or 95 feet or 92. The whole block is only 184 feet, which gave me 85,405 square feet at $3.20 a square foot or $8,000 a lot at $283,212.80. Fronting on Avenue B, 20th and 21st Streets, I have two corner lots of 2,323 feet by 100 each of 4,600 feet at $3.20 plus 30 per cent $19,136. I have also six inside lots 2,300 of 100 each at 13,800 square feet, $3.20 a square foot $44,160 [fol. 2579] or a total of $380,134.80, to which I have added

ten per cent $38,013.48, which gives me a grand total of $418,438.13. My present statement of figures for this property completely covers the factors of computation as to this Block 978, Lots 5 and 6.

With respect to Block 988, Lot 1; this is a block situated between 14th and 15th Streets, Avenue C and D. I have taken two corner lots, one on 15th and one on 14th Street, containing 5,706.50 square feet at $8,000 per lot. That is the corner of Avenue C and 15th and 14th Streets, plus 30 per cent for corners, which is $20,800. I have six inside lots on Avenue C at $8,000 each which is $48,000. On 14th Street and 15th Street I have 38 lots at $7,500 each, would be $285,000. Fronting on Avenue D I have two corner lots, one on 14th Street and one on 15th Street, containing 5,650 square feet, at the rate of $8,000 per lot, plus 30 per cent for a corner, which would be $20,800. Fronting on Avenue D, I have six inside lots at $8,000 each, which would be $48,000 making a total of $482,600 plus ten per cent for plottage, $48,260 making a grand total of $464,860. That completes my computation as to Block 988, Lot 1.

Block 989, Lot 16, I have two on that property, Lot 16 and Lot 1. I have the two separate, that is, I did not take into account that they were under a common or joint use.

As to Lot 16 of Block 989, my unit value is $3 a square foot $7,000 per lot. That is, I took the same figure for both 15th and 16th Streets. Fronting on 15th Street one [fol. 2580] lot containing 1,923 square feet at $3 per square foot, $5,775. Then I have got 16 lots fronting on 15th and 16th Streets at $7,500 which would be $120,000. I have got one lot fronting on 16th Street containing 2,478 square feet at $3 a square foot, which would be $7,434 making a total of $133,209 to which I have added a plottage of ten per cent, $13,320.60, which would give me a grand total of $146,529.90. Those are all the elements I took into account on that.

Lot 1, of Block 989, I have taken the two corner lots fronting on 15th and 16th Streets on Avenue C. I have based my corner lots on Avenue C and 15th and 16th Streets, containing 5,650 square feet at $8,000 per lot, plus 30 per cent for the corner, $20,800. On Avenue C, I have got eight

lots. That is all on Avenue C. The price per lot on Avenue C was $8,000 the average size being 25 by 100. These are more, and I gave them the square foot value, giving them the full benefit of the additional number of square feet. Thirty per cent for the corner additional. I have six inside lots at $8,000, $48,000. Then on 16th Street I have six lots at $7,500 which would be $45,000. On 15th Street there is a small lot there of irregular size, containing 1,126 square feet at the rate of $3 per square foot, which would be $3,408. That is on 15th Street, and then on 16th Street I have the same irregular lot containing 1,608 square feet, $3 per square feet which would be $5,067. Then I have fronting on 15th Street, six lots, 25 feet by half the block, at $7,500, which would be $45,000 or a total of $167,275 to which I have added 10 per cent for plottage, amount- [fol. 2581] ing to $16,727.50, or a total of $184,002.50. I have completed my statement of factors as to Lots 16 and 1 of Block 989.

As to Block 991, Lot 1, that is a parcel of land situated between 14th and 15th Streets, Avenue D and Marginal Street. There are two corner lots, one on 15th and one on 14th Street and Avenue D, containing 5,650 square feet at a rate of $8,000 for a city lot, or $20,800. The dimensions of these lots are 28 feet 3 inches by 100. That is why I have given the number of square feet instead of the standard lot. Then I have six inside lots at $8,000 a lot, or $48,000, on Avenue D, 25 feet by 100. Then I have eight inside lots on 14th and 15th Streets, at $7,500 or $60,000. Fronting on the Marginal Street, two corner lots containing 7,047 square feet, $4 per square foot, or at the rate of $10,000 per lot, $36,640.40. I have six inside lots or 18,630 square feet at $4 per square foot fronting on Marginal Street, $74,020; a total of $236,964.40, to which I have added ten per cent plottage, or $23,996.44, making a total of $263,960.84. There is also a bulkhead in the same block. I used 226.10 linear feet bulkhead rights for which I have given $45,200.

As to Block 1028, Lot 38, this was a parcel of land situated on the south side of 57th Street, 115 feet west of Seventh Avenue. It has a frontage on 57th Street of 120 feet, irregular, containing 12,080 square feet. At $40 per square foot, or $100,000 per lot, that would be $483,200 to

which I have added plottage of ten per cent, $48,329, which gives a total for the land of $531,520.

[fol. 2582] Block 1089, Lot 1, this parcel of land is situated between 41st and 42nd Streets, Eleventh and Twelfth Avenues, and also Twelfth Avenue and the established bulkhead line of 1890. I have taken two lots on the corner of 41st Street and Eleventh Avenue containing 4,942 square feet, 25 by 100. They are really 24 and some fraction less. Fronting on Eleventh Avenue running back 100 feet, at $14,000 apiece, plus 50 per cent for the corner, $42,000. I have taken two inside lots at $14,000 each, $84,000. That is, inside lots on Eleventh Avenue. The corner lot, I based that on Eleventh Avenue. Then I have taken 28 lots on 41st Street at $12,000, each, $336,000, making a total of $966,000 to which I have added ten per cent plottage, $96,600 or a total of $1,062,600. I have also taken west of Twelfth Avenue at 19,615 square feet which is $177,750. There is also 197.50 linear feet of bulkhead rights, which I have put in at $250 per linear foot, or $49,375, giving me a total of the property all-told of $1,289,725. On 42nd Street, 28 lots of 25 by 100, the unit price is $18,000. I have stated all of my factors on Block 1089, Lot 1, and on the bulkhead property in connection with it.

On Block 1090, Lot 23, on the north side of 42nd Street this is a parcel of property situated on the westerly side of Twelfth Avenue, 100 feet west of Eleventh Avenue, 150 feet frontage by 100 feet 5 inches deep. I have taken six lots at $18,000 each, $108,000, to which I have added ten per cent plottage, $10,800, or a total of $118,800.

Block 1092, Lot 16, on diagram 8, this is a parcel [fol. 2583] of land situated between 44th and 45th Streets, between Eleventh and Twelfth Avenues, containing 54,546 square feet, at the rate of $12,000 per lot, or $4.80 per square foot, $263,740.80, to which I have added plottage of ten per cent, $26,374.08, making a grand total of $290,114.88.

Block 1093, Lot 9, as shown on Sheet 8 of Plaintiff's Exhibit 258, is a parcel of land situated between 45th and and 46th Streets, and fronting on Twelfth Avenue. I have taken two corner lots, one on the corner of Twelfth Avenue and 46th Street, the other on 45th Street and Twelfth

Avenue containing 5,948 square feet at $6 per square foot plus 50 per cent for the corner, $53,532. Six inside lots, $12,000 each $104,688, fronting on Twelfth Avenue. I faced my corner lots on Twelfth Avenue. I have six lots also on the street at $12,000 each $72,000. Also 17,573.51 square feet or seven lots, on 45th Street at $12,000 per lot $84,000, or a total of $314,220, plus plottage of ten per cent, $31,422, or a grand total of $345,642. That covers all my factors on Block 1003, Lot 9.

Block 1157, Lot 1, which is on Sheet 12 of Exhibit 258, is property situated between Amsterdam Avenue and West End Avenue and 65th and 66th Streets. I have taken two corner lots fronting on Amsterdam Avenue, containing 5,084 square feet, at $20,000 per lot, plus 30 per cent for a corner, would be $52,000. I have taken two inside lots on Amsterdam Avenue at $20,000 each, $120,000. I have taken 48 street lots on 65th and 66th Streets at $10,000 a lot, would be $480,000. I have taken two corner lots, [fol. 2584] fronting on West End Avenue at $15,000 plus 30 per cent, $38,800. I have taken six inside lots fronting on West End Avenue at $15,000 each, $90,000, a total of $780,800 plus $78,080 plottage, my plottage being ten per cent extra there, brings the total up to $858,880. That completes my factors as to Block 1157, Lot 1.

Block 1177, Lot 21, is a parcel of land situated between West End Avenue and the right of way of the New York Central and Hudson River Railroad, between 65th and 66th Streets. Two inside lots situated on West End Avenue, between 65th and 66th Streets, containing 5,084 square feet at $15,000 each. There are two corner lots, $39,000. Six inside lots fronting on West End Avenue at $15,000 each, $90,000. I have got eight lots, standard size, on 66th Street, $10,000 each, $80,000. I have also another lot on 66th Street, fronting the New York Central and Hudson River Railroad, irregular in shape, containing 3,280 square feet, at the rate of $4 per square foot, or $10,000 per lot, which would be $13,156, and I have another lot on 65th Street irregular in shape, containing 3,590 square feet at $4 per square foot, would be $140,350. It extends from 65th Street overlooking the New York Central and Hudson River Railroad; half a block along that right of way—102.79 feet.

By the Master:

I have got an irregular shaped lot on the northwest corner of Block 1177, Lot 21. It is 43.9 feet frontage and the rear of the lot is 21.9 feet. That would be on the northeast corner of 65th Street. Another irregular shaped lot on the southwest corner of the Block 1177, [fol. 2585] Lot 21, on the north side of 65th Street. It has a frontage on 65th Street of 24.9 feet, 46.9 in the rear by 102.71 feet on the westerly side, and on the easterly side 100.5 feet, containing 3,590 square feet, which I have given $4 a square foot at the rate of $10,000 per lot, $140,360. Explaining it more fully, we have nine lots, in fact eight, one is a corner lot facing on West End Avenue and running 100 feet back. On 66th Street we have 8 inside lots, the frontage of which is 43.9 feet. There are seven lots on the 65th Street side. The corner lot is 25.5 feet on West End Avenue and 65th Street, running back 100 feet. Then I have from there seven lots, of regular size, at $10,000 each, would be $70,000. Then I have got one of irregular size with a frontage on 65th Street of 24.9 in the rear 46 feet, containing 3,590 square feet at $4 a square foot, would be $14,360, or a total for the block of $306,516 to which I have added 10 per cent plottage, $30,651.60, making a total of $337,167.60. That completes my computation as to Block 1177, Lot 21.

By Mr. Ransom:

Lot 17 of Block 1456 is a parcel of land situated between 61st and 62nd Streets west of Avenue A. I have two corner lots, one on 62nd Street and Avenue A, and one on 61st Street and Avenue A, containing 5,084 square feet, at $9,000 each, plus 30 per cent for corners $23,400. I have six lots fronting on Avenue A at $9,000, $54,000. I have four lots on 62nd Street at $7,500, each, $30,000. I have also one lot of irregular shape containing 3,163 square feet at $3. a square foot would be $9,489. I have also four lots fronting on 61st Street of $7,500 each, $30,000. I have also an irregular lot fronting on 61st Street, containing 2,310 square [fol. 2586] feet at $3. a square foot, $6,930, or a total of $153,819, to which I have added 10 per cent plottage $15,381.90 which gives me a total of $169,200.90. That is all on that parcel.

Block 1457, Lot 17, is a parcel of land situated between 62nd and 63rd Streets west of Avenue A. I have two corner lots, one on 62nd Street and the other on 63rd and Avenue A at $10,000 per lot plus 30 per cent for corners, would be $26,000. Six inside lots on Avenue A at $10,000 a lot, $60,000. I have 8 street lots at $8,000 each would be $64,000. Also two small lots, one on 63rd Street, another one on 62nd Street, containing 3,012 square feet at $3.20 a square foot, $9,638.40, making a total of $150,683.40, to which I have added plottage of 10 per cent $15,963.84, making a grand total of $175,602.24.

Block 1457, Lot 6, is a parcel of land directly west of the above described. I have two street lots containing 3,310 square feet at $3.20 a square foot, $10,592. I have 8 lots fronting on 63rd Street at $8,000 a lot would be $64,000. One irregular shaped lot containing 2,519 square feet at $3.20 would be $8,080.80. I have 9 lots on 62nd Street at $8,000 a lot would be $72,000 or a total of $154,652.80, to which I have added 10 per cent which is $15,465.28 or a grand total of $170,118.08.

As to Block 1475, Lot 1, is a parcel of land situated easterly of Avenue A, situated between 62nd and 63rd Streets, irregular in shape. I have taken a corner lot, corner of 62nd Street and Avenue A, containing 2,328 square feet at $10,000 per lot, plus 30 per cent for the corner, or $13,000 per lot, would be $12,105.60. I have taken three inside lots [fol. 2587] containing 7,208 square feet at the rate of $4 per square foot, $28,832, as facing on Avenue A, which would give me a value of $40,937.60, to which I added 10 per cent plottage, $4,093.76, or a grand total of $45,031.36. In placing my value upon Block 1475, I did not take into account the fact of any joint or common use of the lots 15, 16, 17, 18 and 19, and likewise as to Block 1457, Lot 6, I did not take into account the fact that it is under any joint or common use with Block 1457, Lot 17. I did not take into account any elements, either, of conjunctive value with respect to any of these parcels. I finished my statement with respect to Block 1475, Lot 1.

Block 1482, Lot 27, this is a parcel of land situated on the west of Exterior Street at the corner of 71st Street two inside lots irregular in shape. Three lots, containing 9,954 square feet at $3.20 per square fact, or $8,000 per lot, $31,832.80, and Lot on the corner of Exterior Street and 71st

Street containing 3,422 square feet at $3.20 plus 30 per cent for corner, 14,235.52, making a total of $46,088.32, to which I have added 10 per cent plottage which amounts to $4,608.83, making a grand total of $50,697.15. That is all on Block 1482, Lot 27.

Block 1642, Lot 33, is a parcel of land situated at the northwest corner of 114th Street and Third Avenue. I have taken one corner lot at the corner of Third Avenue and 114th Street at $16,000 per lot, 50 per cent for corners, making $24,000. I have taken two lots on 114th Street adjoining at $10,000 each which would be $20,000. The total is $44,000, and I have added plottage of 10 per cent to that, which [fol. 2588] would be $4,400, or a grand total for the land $48,400.

As to Block 1670, Lot 1, this property is situated between First and Second Avenues, and 98th and 99th Streets. I have taken two corners at Second Avenue and 98th and 99th Street, at $9,000 each, plus 50 per cent for corners, making $27,000; six inside lots at $9,000 each making $54,000. I have taken 18 lots on 99th Street at $5,500 making $99,000; I have taken two corner lots on the corner of First Avenue and 99th Street and also 98th Street, at $8,000 plus 50 per cent for the corners, $24,000, I have taken six inside lots on First Avenue at $8,000 a piece, or $48,000. That makes a total of $351,000 plus 10 per cent for plottage amounting to $35,100 or a grand total of $386,100.

Block 1682, Lots 8 and 11 is a parcel of land situated between 110th and 111th Streets west of First Avenue. I have taken the two corner lots, one on 110th Street and the other on 111th Street, at $10,000 plus 50 per cent for the corners, $30,000 in all. I have taken six inside lots fronting on First Avenue at $10,000 each, or $60,000. I have taken 30 lots which were on 110th Street and 111th Street at $7,000 each, which would be $210,000, that is 15 on each. It gives me a total of $300,000 plus 10 per cent or $30,000, which gives me a grand total of $330,000. Those street lots are practically the same size, 25 by 100, or 25 by 100 feet, 5 inches, and the same thing is true of the avenue lots as far as size is concerned and my corner lots are 25 by 100.

[fol. 2589] Block 1683, Lot 18, is a parcel of land situated west of First Avenue on 111th Street. I have taken one corner lot at $10,000 per lot, with 50 per cent for the corner,

totaling $15,000. I have taken two inside lots at $10,000 each, or $20,000. I have taken five street lots at $7,000 each, or $35,000 making $70,000, plus 10 per cent plottage or $7,000 making a total of $77,000. That is all on that parcel.

Block 1692, Lot 1; this property is situated between First Avenue and the Marginal Street and 98th and 99th Streets. I have taken two corner lots containing 5,184 square feet; Those are standard lots; at the rate of $8,000 per lot that makes $24,000. I have taken six inside lots at $8,000 each, or $48,000. I have taken seven street lots at $6,000 each or $42,000. Fronting on the Marginal Street and 98th and 99th Streets two corner lots containing 6,903 square feet at the rate of $8,000 per lot, $24,000. Six inside lots at $3.20 per square foot would be $64,022.40, $7,000 a lot; the total is $202,022.40 plus 10 per cent for plottage, $20,202.24 or a grand total of $222,224.64. For the First Avenue corners I allowed $8,000 plus 50 per cent for corners. I added for corners in the Margial Street, the same percentage.

As to Block 1704, Lot 5, is property situated west of Pleasant Avenue between 110th and 111th Streets. I have taken two corner lots one on the corner of 110th Street and the other on the corner of 111th Street and Pleasant Avenue, containing 5,484 square feet at $8,000 per lot, plus 50 per cent for the corner, $24,000; six inside lots at $8,000 [fol. 2590] apiece, $48,000; 16 lots on 111th Street at $7,000 each, $112,000; two small lots, one on 111th Street, fronting on 111th Street, and one fronting on 110th Street, about a six foot strip both of them together, containing 1,012 square feet at $2.80 per square foot, which would be $3,393.60. That is their combined area. Then I have 16 lots on 110th Street at $7,000 each, which would be $112,000, making a total of $299,593.60, to which I have added 10 per cent plottage or $29,959.36, making a grand total of the property of $329,332.96.

As to Block 1712, Lot 2 L, I would like to have that go over at present. I see where I have made probably a little mistake in computing these figures.

Block 1978, Lot 37, is situated west of Amsterdam Avenue on 123rd and 124th Streets. The whole plot contains 20,164 square feet, at the rate of $5.60 per square foot, or $14,000 per lot, $112,000. I took it on a square foot basis. I have added 10 per cent plottage, amounting to $11,200,

or $123,200 total. I made no division by lots. I took it on the square foot basis instead of a lot basis there, because if I put it on the lot basis I would only give you 2,500 square feet in each lot, whereas I have given you 2,300 additional feet, which is really a fairer way than it would be to give you the individual lots. If I had taken the lot basis I would give a lower figure because I would give you 2,500 square feet instead of 2,523.

Block 1998, Lots 50, 53, 54, 55 and 56, is property situated between 12th Avenue and Broadway, and 132nd Street, containing seven lots at $8,000 per lot, $56,000, to which I have added plottage, bringing the property up to—the plottage amounts to $5,600, which gives me a grand total of $61,600. [fol. 2591] That is the only way I have figured it. This was practically 25 feet by 100 feet, or 99 feet 11 inches, which I call 100, because it is only one inch shorter.

Block 1999, Lot 1, is a parcel of land situated east of 12th Avenue, between 132nd and 133rd Streets. I have taken two corner lots, one on the corner of 12th Avenue and 133rd Street, and one at 132nd Street, at $10,000 per lot, plus 30 per cent for the corner, or $26,000, six insides lots at $10,000 each, $60,000; 12 street lots at $8,000 apiece, $98,000, or at total of $182,000, plus 10 per cent for plottage, $18,200, or a grand total of $200,200.

Block 2108, Lot 23, is a parcel of land situated on the southwest corner of 159th Street, 118 feet $8\frac{1}{4}$ inches east of St. Nicholas Avenue. There are two lots 25 by 100 each, at $9,000 a lot, $18,000; plottage 10 per cent, $1,800; total $19,800. That is all as to that parcel.

As to Block 2497, Lot 132, the Exterior Street property, the sheet which has been furnished as to the value of this property shows that it was originally written as $220,640, and has been revised by writing it as $200,640. The $200,000 is right. I put it in at $6,000 per lot; thirty-three lots, located on the east side of 153rd Street and Cromwell Avenue, Exterior Street, and the right of way of the New York Central and Hudson River Railroad. I did not allow any separate amount for corners. I gave the flat rate over the whole thing. Corners would not be worth more than the thirty per cent, but there was a great deal of inferior land there, and I considered the flat rate over the whole would [fol. 2592] be the best way to get at the true value. I had

in mind that an individual plot there would have very little value and I had the plottage in mind when I gave you the rate of $6,000 a lot. I have given all the elements and factors that I took into account on this property. This property could have a railroad siding. I assumed they could have one by applying to the proper authorities. I have not any doubt about that. It was one of the elements, a very important factor, and one which should be taken into account. I have given everything with respect to Block 2497, Lot 132.

Block 2583, Lot 450, is a parcel of land situated on the easterly side of 132nd Street with a frontage of 20 feet on the street and in the rear 65.42 feet, the whole property containing 4,815 square feet. I put it in at the rate of $2,600 per lot, or $1.04 per square foot, which would be $5,000 for the whole.

Block 3236, Lot 1, contains about 175 lots, on an average of about $1,140 per city lot for 25 by 100, or $199,500. I figured this only on a square foot basis for the area as a whole. I thought that was the correct way to figure it. I considered its size but I did not consider its corners. I mean I did not divide it up into corners. I considered its size and all the elements that went to make up its value. In my opinion, the physical situation there was such as to make that the proper way of valuing that parcel. It would be difficult, as a matter of fact, to do anything else. It really amounts to $1,140 per city lot, 25 by 100. That is a standard size lot, 25 by 100. I did not figure it by the square foot, I took it at so many lots, city lots. I took the whole [fol. 2593] area and figured it in standard city lots and I gave it a city lot price.

On Block 2770, that being the Hunts Point property, shown on Sheet 20 of this Exhibit No. 258, I took into consideration its physical conditions, its locality, its size and adaptability, and I considered $12,000 per acre over the whole of 180 acres, which gave me a value of $2,160,000. Here likewise I valued the property as a whole rather than by splitting it up into lots or parcels. I took into account the size but I did not divide it into separate units. I made no subdivision of it. I took into account its water front location, valued it as of June 1, 1923, as a whole on its location and condition. I thought that was the proper way to

treat this parcel. I made no other or different computation except the one I have given.

Referring to the Astoria property as shown on Exhibit No. 259, Block 849, Lot 1, 850, Lot 1, 859, Lot 1, 861, Lot 1, 870, Lot 1, 881, Lot 1, 892, Lot 1, and 895, Lot 1, the property, upon which I placed a value unimproved of $4,173,320, include the 312 acres. That includes all the Astoria property. I got the figure for the Astoria land on which I gave the valuation of $4,173,320 by taking Block 893 and Block 894 and Block 895 of plot 1, containing 900,000 square feet, at 20 cents a square foot, $180,000; Block 892, plot 2, $240,000. That is plot 2, Block 882, 180,000 square feet at 20 cents a square foot $36,000. Block 881, plot 3, 160,000 square feet, at 20 cents a square foot, $32,000. When I refer to plots 1, 2 and 3 I am referring to some subdivision that I made for identification. I presume Lot 1 is Block 871, Plot 4. 871, Lot 1 is my parcel plot 4. By [fol. 2594] factor there is 160,000 square feet at 20 cents a square foot, $32,000. Block 860 and Block 870, Plot 5, containing 368,000 square feet at 20 cents a square foot, $73,000. Block 859, Plot 6, containing 160,000 square feet, at 20 cents a square foot, $32,000. Block 849, Plot 7, containing 118,400 square feet, at 20 cents a square foot, $23,680, or a total of $421,280. I have taken in Block 850, which contains 312.67 acres at $12,000 per acre, which would be $3,752,040, making a grand total of $4,173,320. With respect to these properties which I describe as plots 1 to 6, I give no separate valuation for the size. I had in mind, in placing 20 cents a square foot, its size, and the same situation is true with respect to Block 860. I made no subdivision with respect to the weight to be given to the size or to corners. I have given all the factors with respect to this Astoria property, and I reached the figures I stated in the manner in which I stated.

As to Block 357, Lot 1, part of that which I valued, contains 2,500 square feet, and I put it in at 40 cents a square foot, $2,000. That is located on the westerly side of Webster Avenue, 475 feet north of Berman Avenue.

Block 850, Lot 2; the front portion contains 1,090 square feet at 20 cents a square foot or $400 per lot, $218. The rear portion contains 5,430 square feet at ten cents a square

foot, $200 per lot, as interior land, would be $543 or a total of $761. I valued that on the basis of conditions as I found them as of June 1, 1923. I did not take into account any elements of use in connection with any other similar parcels of property.

[fol. 2595] JOHN J. BOYLAN, called as a witness on behalf of the defendant Attorney-General, being duly sworn, testified as follows:

Direct examination by Mr. Donnelly:

I am a real estate agent, broker and appraiser and a resident of the City of New York, and have been living here all my life. I live at 418 West 51st Street, Borough of Manhattan, City of New York.

I have been engaged in the real estate business during the past twenty four years and have offices at 277 Broadway and First Street and Ninth Avenue, both in the Borough of Manhattan, City of New York.

I am a member of the Real Estate Board of New York. I am a member of the Real Estate Board of Brooklyn. I am a member of the Long Island Chamber of Commerce, and a member of the National Real Estate Board of the United States.

I am a member of the Appraisal Committee of the Real Estate Board of New York, and also a member of the Port and Terminal Committee of the Real Estate Board of New York.

For ten years I was a member of the State Senate Committee of Taxation. During that ten years for four years, I was a member of a Special Committee on Taxation appointed by concurrent resolution of the Senate and Assembly to revise the tax laws and to seek a better equalization of tax assessments throughout the State of New York. In the course of the work of that Committee, I traveled throughout the State, together with the other members of the Committee, and delved into tax assessments in the various parts of the State.

I was the ranking Democratic member of the State Senate Finance Committee and handled all the matters relative

[fol. 2596] to the bill for the authorizing of the construction of the vehicular tunnel between the States of New York and New Jersey, which involve many problems concerning the water front and other real estate matters.

I was a member of the State Senate Finance Committee which considered the Port Authority Bill and this involved a study of the water front of New York Harbor and necessitated a close study and attention to all the details in connection with the proposed legislation.

I am also a subscriber to Record and Guide, which is the recognized real estate paper and also a subscriber to the Record and Guide Quarterly, and I am subscriber to practically all the principal real estate papers and magazines that are printed in this country.

I have appraised for the Banking Department of the State of New York. I have appraised for the Attorney-General of the State of New York. I have appraised for the Comptroller of the State of New York. I have appraised for the Department of Water Works of the State of New York.

I have appraised for the Title Guaranty & Trust Company, the Broadway Trust Company, the Corn Exchange Bank, the New York Central and Hudson River Railroad Company, the Emigrant Industrial Savings Bank, the Federation Bank of New York, the Industrial Development Corporation, the New York Telephone Company.

I have appraised the estates of the following: The Applebee Estate, the Walbridge Estate, the Estate of [fol. 2597] Rudolph J. Shaffer, and many other large estates.

I have been retained by the City of New York and have testified for that city in the proceedings for the acquisition of title of the lands owned by the Atlantic Avenue Ferry, Brooklyn and the Hamilton Avenue Ferry, the Greenpoint Ferry, the Astoria Ferry, the water front property at the foot of Montague Street, Brooklyn; the large proceeding on the North River known as the 44th to the 48th Street Proceeding, which embraced the land taken for the construction of the thousand foot pier at the foot of West 46th Street.

I have also appraised for the committee consisting of the State Engineer and the State Superintendent of Public

Works, and the Dock Commission of the City of New York, which Commission was known as the Harlem River Commission. For this Commission I appraised the lands on the Harlem River, together with the improvements thereon, the property of the Johnson Iron Works, and have re-appraised this same property for a Commission that is now sitting and was taking evidence at to the value of this property the State having decided to acquire it in order to straighten the channel of the Harlem River.

I have also been retained by the City of New York in many street opening proceedings in all parts of the city, and I have also appraised for — number of distinguished attorneys including James A. O'Malley; Cannon & Cannon; Knox & Dooling; Breed, Abbott & Morgan; Truman H. and George H. Baldwin; Michael J. Mulqueen Edward W. Murphy, Olvany, Russell & Ingle; Elliott, Robeson & Dean; Skinner & Berment; Anderson & Anderson; Parker & [fol. 2598] Aaron; Conway & Weed; Peale & McLaughlin; Carswell & Carmody; Henry M. Powell; Joseph H. Hayes; Philip Livingston; Goepel & Goepel; Roosevelt, Kobbe & Thatcher; Harris, Corwin, Moffatt & Schek and many others.

I have also testified for the City of New York in the matter of the acquisition of the five piers on the North River known as Piers 0-1, 2, 3, 4 and 5, North River.

I have also appraised for the State of New York, the Barge Canal Terminal at the foot of Dyckman Street on the North River. I have appraised also for the City of New York the bulkhead at the foot of Houston Street, East River, also the bulkhead and pier at the foot of Grand Street, East River. I have made many other appraisals of which I have no record at this time.

I am familiar with the lands described on Sheets 1 to 21, both inclusive, of Plaintiff's Exhibit No. 258 and with the lands described on the several sheets of Plaintiff's Exhibit Numbered 259, 261, 264, 265, 850, 851, 852, and 853, and have been and am familiar with the values of real estate in the vicinity of the land described in the sheets of the exhibits.

I have kept myself informed as to the sale and leases mortgage and other transactions relating to real estate in the parts of the City of New York in which the lands shown on the sheets of the exhibits mentioned are located.

At the request of the defendant Attorney General, I made an appraisal as of June 1, 1923, of the lands described on the sheets of the several exhibits I have been referred to. [fol. 2599] In my connection with my appraisal, I personally visited each parcel of land described on these exhibits referred to. I forgot to state in my qualifications that I appraised some of these properties in the Gas Rate Case of 1920. I also appeared as a witness and appraised and testified as to some of the properties of the Central Union Gas Company, the Northern Union Gas Company and the Brooklyn Union Gas Company. I appeared as a witness in the former suit of the Consolidated Gas Company, as a joint witness of the State of New York and the City of New York. I was paid by the Attorney-General. That was with reference to some of the parcels I have included in my appraisal here. I made some visits to those parcels this year. I have formed an opinion as to what was the market value on or about June 1, 1923, of the lands unimproved shown on the sheets of exhibits as to which reference has been made. In arriving at my opinion on these different parcels of land I adopted the areas shown in either blue or pink tint on the sheets of those exhibits and I have prepared a schedule setting forth what in my opinion was the value, on or about June 1, 1923, of each parcel of land unimproved as shown on these exhibits.

The schedule sets forth as to each parcel of land my opinion of its value unimproved on or about June 1, 1923. I have listed each parcel by block and lot number and locations and then by value and that applies to the properties of the Consolidated Gas Company, the properties of the Astoria, Light Heat & Power Company and also certain properties owned by the Standard Gas Light Company and [fol. 2600] the New Amsterdam Company, the properties of which two last named companies are contained in Plaintiff's Exhibit- Nos. 261, 264 and 265, and also the properties of the East River Gas Company shown on Plaintiff's Exhibits Nos. 850 to 853 inclusive.

If I were asked as to the value unimproved as of June 1, 1923, of each of the lots, blocks and parcels set forth in my schedule I would testify to the value assigned to each in my schedule. In valuing the property embraced in Block 369, shown on Sheet No. 2 of Plaintiff's Exhibit No. 258, with

reference to that particular one. I did not take the dimensions shown on the exhibits. I took them in all the other exhibits with the exception of Block 369, Lot 1.

[fol. 2601] July 11, 1924.

Met pursuant to adjustment.
Same appearances.

J. J. Boylan, resumed the stand.

Direct examination (continued) by Mr. Donnelly:

In valuing the property embraced in Block 369, shown on Sheet No. 2 of Plaintiff's Exhibit 258, I took the block bounded on the north by East 13th Street, on the South by East 12th Street, on the east by the west side of Tompkins Street and on the west by Avenue D, containing in all an area of 94,474 square feet.

By the Master:

For the purpose of arriving at my valuation, I assumed that the west side of Tompkins Street was distant 590 feet from the easterly side of Avenue D on East 12th Street and on East 13th street that the westerly side of Tompkins Street was distant 415 feet from the easterly side of Avenue D. All I valued was that was within a point between East [fol. 2602] 12th and East 13th Streets, Avenue D, at a point that distance from it.

By Mr. Donnelly:

In valuing the property embraced in Block 369, I have not included any value of bulkhead rights in the slip on the northerly side of Block 369.

On Block 239, lots 1 and 5 which, which is the Hester and Elizabeth Streets property, the improvements thereon, as of June 1, 1923, were three brick buildings, one large two-story building on Hester Street, with two brick buildings on Elizabeth Street, one a three-story brick building and the adjoining one a five-story brick building. Those improvements I have just described in my opinion added to the value of the land, as of June 1, 1923, $100,000.

On Block 870, lots 47 and 60, on June 1, 1923, the improvements were the Irving Place Building, a 19 story fireproof building occupied entirely for office purposes. In my opinion, it added to the value of the land the sum of $3,575,529.60. The two story brick and stone building having a frontage of 22.5 feet on East 15th Street by 84 feet in depth and by 48 feet high, known as the Annex, to the east of the [fol. 2603] main building on Irving Place, added to the value of the land $45,552.

With reference to Block 1028, Lot 38, which is the West 57th Street property, this property is a three-story and basement fireproof building, and in my opinion it added to the value of the land the sum of $340,800. I last visited that building during the month of June, 1924. I went through it and I found that the third floor was used principally for storage of gas appliances.

With reference to the improvements on Block 1642, lot 33, on the Third Avenue side there is a three-story and basement brick building; on the East 114th Street side there is a three-story brick and stone building. There was also a rear building in the rear of the building on East 114th Street. In my opinion, these buildings added to the value of the land the sum of $82,219.50.

I would assign to each one of the parcels in this schedule the value that is set forth on the schedule, marked "Defendants' Exhibit 39" which reads as follows:

Summary of John J. Boylan's Appraisal

239	1-5	$160,135 00
368	1	451,269 28
369	1, 10, 11, 12, 13, 15	411,108 46
382	22	314,382 00
870	47-60	447,700 00
951	35	53,433 60
952	7 etc. 29, 30, 35	346,317 84
953	1	480,832 70
978	5-6	420,627 68
979	1-27	523,543 32
[fol. 2604] 982	13	333,818 32
985	7, etc., 19, 20	197,340 00
987	37	130,879 94
988	1	485,350 38

989	16	150,819 90
989	1	192,183 20
991	1	274,169 72
991	47	45,220 00
1028	38	531,520 00
1089	1	1,276,456 36
1090	23	119,298 96
1092	16	290,114 88
1093	9	346,362 72
1157	1	878,658 00
1177	21	345,292 20
1456	17	173,937 06
1457	6	170,746 40
1457	17	180,852 32
1482	27	51,901 70
1475	1	47,080 00
1642	33	48,400 00
1670	1	396,100 00
1682	8-11	330,000 00
1683	18	77,961 40
1692	1	216,424 56
1704	5	332,571 36
1712	2	73,560 00
1978	37	123,200 00
1998	50, 53, 54, 55, 56	60,703 80
1999	1	197,815 20
2108	23	19,800 00
2497	132	200,640 00
2583	450	4,815 00
3236	1	199,500 00
Hunts Point: 2770, 2775, E. F. G. H. 2777J. 2781, 2776, 2778, 2780		$2,160,000 00
Astoria: Blocks 849.1, 850.1, 859.1, 860.1, 870.1, 871.1, 881.1, 982.1, 893.1, 894.1, 895.1		$1,173,320 00
357	1 (Part of)	2,000 00
850	2	837 10
	Land	$18,439,000 36
	Buildings	4,098,549 00
		$22,537,549 36
Building Irv. Pl. Annex		45,552 00
		$22,583,101 36

[fol. 2605] Buildings:

Hester Street	$100,000 00
Irving Place	3,575,529 00
West 57th Street	340,800 00
114th Street	82,220 00
	$4,098,549 00

Cross-examination by Mr. Ransom:

I prepared the valuation of the land of the Consolidated Company concerning which I have testified to. I am a member of Congress. I did not mention my official status any more than was necessary to bring out the fact that I had been a member of these committees which gave me quite detailed and particular knowledge on the workings of the tax system of the State. I prepared the inventory and appraisals of the buildings, the five different buildings on five different properties, to which I testified. I have not testified in the Johnson Iron Works case yet, because the Commission has adjourned waiting to take our testimony when they resume, but I have furnished my figures to the State, not to both sides, because it is not a matter of record yet. My figures are not a matter of record in the pending proceeding. I have made an appraisal for the Harlem River Commission, as I stated yesterday.

As to my working papers with respect to these properties, I have my diagrams here. You may see my details. (Witness hands book to Counsel for the plaintiff.) Counsel has a copy of what I have. I prepared them within the last few weeks and completed them within the last week or ten days. [fol. 2606] These figures are made on what is called a cubic foot basis. A draughtsman or an engineer of Mr. Alrich's Department, Consolidated Gas Company, made the measurements, and furnished them to me. I applied the computations which you have indicated in the way which is here shown. I also have here the details of your computations and factors with respect to the valuation of land. These are also in this volume. These are my complete working papers on these buildings.

(Book of working papers received in evidence and marked Plaintiff's Exhibit 975.)

We measured the buildings together; we made them together. I assisted in doing it. I told them what I wanted measured and they measured them. I am not a civil engineer or an engineer at all.

[fol. 2607] MARTIN MCHALE, resumed the stand.

Cross-examination continued by Mr. Ransom:

I made no mistake insofar as the figures are concerned at page 9097 of the mimeographed stenographic record with respect to Lot 2 of Block 1712. At the time at first glance I thought that I had made a mistake. I find on investigation that I did not make any mistake.

This is a parcel of land situated on the easterly side of Pleasant Avenue, situated between 110th and 111th Streets, irregular in shape. I have taken the corner of 110th Street and the corner of 111th Street, both containing 2,332 square feet, at the rate of $9,000 per lot, plus 50 per cent for the corner, which would be $12,592.80. The remaining 6,749 square fet inside lots, at the rate of $3.60 a square foot, would be $24,289.20, or a total of $36,882, to which I have added plottage of 10 per cent amounting to $3,688.20, or a grand total for the upland of $40,570.20. There were 209.57 linear feet of bulkhead rights at $1.50 per linear foot, $31,435.50, making a grand total for the bulkhead rights and upland of $72,005.70.

The figures with respect to the buildings on five different parcels of land, were as of June 1, 1923. In my opinion, they added to the market value of the land and represented what in my opinion was the market value of the buildings on those dates. I think I completed my valuation of those buidings about a week or ten days ago. I should say I be-[fol. 2608] gan them about two or three weeks ago; the same time that Senator Boylan. I saw the buildings last year and have been in all of them several times. I did not see Hester Street, but 57th Street and 2084 Third Avenue. I cannot tell you what date I was in 2084 Third Avenue in 1923. In fact, I was in that several times in 1906, 1907 and 1908. I really could not give the dates, for I never keep the dates. I am willing to say that I was there. I think I went

in there to buy a gas stove. I do not think I was in 212 West 57th Street in 1923. I think I was in the General Office Building, not in the extension, at least a half dozen times. They have exhibitions there on different occasions. I do not think I was in the extension until about two weeks ago. I was not at any time above the ground floor in the main building in the G. O. Building in 1923. That is, I do not remember being above the first floor. I come in to see the display and exhibits on the first floor a number of times and find them interesting, as many other people do. I was there in a number of times for that purpose. I have the details of my computations in connection with the parcels on these five buildings here and they are arranged in the order to which I testified.

(Witness hands book to plaintiff's counsel; book received in evidence, and marked Plaintiff's Exhibit 976.)

[fol. 2609] July 14, 1924.

Met pursuant to adjournment.

Earnest Eddy, a witness called on behalf of the defendant Attorney General, being duly sworn, testified as follows:

Direct examination by Mr. Donnelly:

I am a Public Accountant. My training and experience are as follows: Professional education: Graduate B. S. Degree, Commerce, Oregon Agricultural College; Graduate L. L. B. Degree, University of Washington; Attended Western Institute of Accounting, Commerce and Finance, preparing for C. P. A. examination; Post Graduate, Cost Accounting Course, J. Lee Nicholson's Institute of Cost Accounting. Professional training and work: Six years and over of general and commercial work, accounting, etc. Five and one-half years on accounting staff of Certified and Chartered Public Accountants, including: A. S. Hanson & Co., C. P. A., Seattle, Washington; Scovell, Wellington & Co., C. P. A., New York and Springfield; Lingley, Baird & Dixon, New York City; Haskins & Sells, New York City. Three years instructor and lecturer, accounting and com-

merce, as follows: 2 years, Klamath Falls High School; 1 year, Reed College, Portland, Oregon; accounting; ½ year, Oregon Institute of Technology, Portland, Oregon, lecturer, cost accounting. Professional standing: Certified Public Accountant, State of Washington; American Institute Examination—November, 1918; Certified dated, spring, 1919. Associate, American Institute of Accountants. Member, Society of Industrial Engineers. Member, National Association of Cost Accountants. I made an examination of certain maps of the Consolidated Gas Company; examined maps Nos. 0 to 730, inclusive. These maps were [fol. 2610] stated by Mr. Kingsbury, an employee of the Consolidated Gas Company of New York, to whom Mr. Davidson, an official of the Consolidated Gas Company, referred me for information regarding the maps of mains kept by the Consolidated Gas Company, to be all the maps showing the mains of the Consolidated Gas Company and affiliated gas companies for the Island and Borough of Manhattan. These maps are approximately two and a half feet by five feet—that is, two and a half feet wide by five feet long, drawn to the scale of 15 to the inch. They show the various streets of the Borough of Manhattan, the gas mains located therein, and indicate the sizes of the mains both by notations on the maps and by color, and also the locations of the mains in the streets and the side of the streets, and the relative position with respect to each other.

(Maps received in evidence and marked Defendant's Exhibit No. 40.)

The ownership of each main is shown on the maps by abbreviations of the different companies. By abbreviations I mean the maps show, for the New Amsterdam Company, "N. A."; "Stan."—this abbreviation varies some—"Std." and "Stand," Standard Gas Light Company of the City of New York; "Mut." for the New York Mutual Gas Light Company; "Con." or "Cons.", the Consolidated Gas Company; "Con.", with "Manh." in parenthesis, or "Man." Sometimes that varies, too, in parenthesis, for the Manhattan Gas Light Company; "Con. Mun."—"Mun." in parenthesis—for the Municipal Gas Light Company; "Con. Met."—"Met." in parenthesis—Metropolitan Gas Light [fol. 2611] Company; "Con. Knick." and "Kn.", some-

times in parenthesis, for the Knickerbocker Gas Company: "Con. Har." for the Harlem Gas Company. I also noticed some with "Con. Pinsch;" I did not inquire about that; all the mains were shown to be dead and it was not, for the purpose I was going over the maps, pertinent.

I examined the maps for parallel mains, and the distance of parallel mains, on the same side of the street, that is, mains on the same side of the street, running in the same general direction, whether exactly geometrically parallel or not. Measurements were made of the length of the mains, two or more mains, where they ran parallel to one another, where they were on the same side of the street. The unit of measurement made by me was to the nearest foot. In my examination I noted the map number, the name of the street, the names of the streets between which the parallel mains ran, which side of the street the paralleling was on, the size and ownership of each main in the parallels as indicated by the map, the length of each main for the distance paralleled, whether for the entire block or other distance involved, and, if it was not for the entire block, which end of the block the main appeared to be on, and whenever the notation "Transfer" was shown on the map that was also noted by me. A table has been prepared by me of these measurements and observations. The parallels were assembled in groups according to the number of mains in each parallel. That is, the number of feet where two mains were parallel were brought together, also for three mains, etc. This group was made up on the basis [fol. 2612] only of mains of 16 inches or less in diameter, except for an approximate square mile of the Island of Manhattan; if the larger mains were also present in the parallel that was also noted. The footage of the mains was arranged in four main groups, as follows: First, 16-inch mains and smaller parallel with one another; second, one 16-inch main or smaller paralleled by one or more larger mains; third, two or more 16-inch mains or smaller paralleled by one or more larger mains; fourth, two or more larger mains parallel with one another. Each of those four groups was subdivided according to the number in the subdivision. In each group and subdivision, there were given the distance where there was paralleling, the total length of mains in the parallel, and also the total length of the mains constituting the parallel.

I took an approximate square mile of the Island of Manhattan as indicated by maps to which we referred, and in that case we, or I, made up a statement showing the parallel mains, both as to these various groupings and also as to the sizes of mains in each combination; and the work entailed in doing that was so great that while the result might have been important, it did not warrant the time it would take to do it for the entire island, and I also found that nearly all the mains, in fact all but about a thousand feet, that were marked "Transfer," were over 16 inches in diameter. So the division was made of 16 inches for one group of mains which were called the smaller mains, and all over 16 inches were classified in the other groups.

[fol. 2613] Table 250, Sheets 9 to 18, inclusive, shown to me by counsel for the defendant Attorney-General, were prepared by me in collaboration with Mr. Harold M. Olmstead. They are a schedule of parallel gas mains appearing on the maps of the Consolidated Gas Company in a district of approximately one square mile of Manhattan, showing the mains grouped by number of mains, also the sizes of mains in each group. The limits in the district to which I refer are from the east side of 10th Avenue to the east side of Fifth Avenue, the south side of 14th Street to the north side of 34th. This district was taken because it appears from an examination of the maps to be the most regular district of approximately a square mile to be found in the Borough of Manhattan or the Island of Manhattan, that is, the fewest oblique-shaped blocks and nearest an exact square, with the least amount of dead area, and crossing such streets as Broadway.

Table 250, sheet 4, handed to me by Counsel for the defendant Attorney General, was also prepared by me in collaboration with Mr. Harold M. Olmstead. It is a schedule of the gas mains appearing on the maps of the Consolidated Gas Company of New York, exhibited to me by Mr. Kingsbury as showing all the gas mains on the island of Manhattan, Borough of Manhattan, at the time I examined them. They are shown on the schedule by groups of mains which were taken in the order that I described awhile ago; that is, the smaller mains and the number of mains in the parallel, and one smaller and one or more larger, two or [fol. 2614] more smaller with one or more larger, and

larger mains. But it is not divided up as the previous schedule was, into different combinations—that is, three, four-inch mains would be classed with one three-inch and two four-inch, while in the previous one they would be separated into different sub-groups.

Table 250, sheet No. 3, likewise handed to me by counsel for the defendant attorney general, was prepared by Mr. Olmsted. I prepared No. 5. I had nothing to do with the preparation of sheet No. 3, except of the underlying data, that is all I might have checked that, but I would not be prepared to testify to that particular sheet. I can tell you approximately what that purports to show, but I prepared sheet No. 5 of that same thing instead of sheet No. 3. I think I checked the ratios on there, but I did not work that out myself.

Mr. Donnelly offered in evidence Table No. 250, Sheets 9 to 18, inclusive, and Table 250, Sheet 4 and 5.

Preliminary cross by Mr. Ransom:

Mr. Olmsted is an engineer with whom I have been associated in this work. I understand he is an engineer and accountant. I am working for the State Attorney-General in this particular case. I have been identified with the accountant firm of Mark Wolff and Associates about nine months. Perhaps I have not mentioned that I do not refer to the association with Mr. Wolff as constituting qualifications to testify on accounting matters in this statement of [fol. 2615] my qualifications. I do not think I did mention it, because I made that up with Mr. Wolff and Mr. Wolff asked me to make up my qualifications for this case, and I presume that he knew that I had been working for him for some time. I had no desire to conceal from this Court in this case that I was working for Mr. Wolff for nine months.

Most of my experience has been in Oregon and Washington. I am not a certified public accountant in any State except Washington, and I am not a licensed engineer in the State of New York or in any other State. I worked in cost accounting engineering. I worked on the construction cost of the Natron and West Cut-off of the Southern Pacific Railroad under H. I. Randell, the engineer in the field. I was working at Natron in the State of Oregon. I never had

anything to do with the construction or operation of gas mains.

I began the work on the Consolidated Gas Company case I think along about the middle of February. I do not remember the exact date that I started in on this. I have worked continuously on it, except about three weeks. Mr. Olmsted has not worked continuously on it since that time. He worked probably a week or ten days with me on the matters and affiliated with me in preparing these tables. The schedules were completed, the first draft, about a week ago, I should say, and there were some changes made and that was completed on last Saturday afternoon—day before yesterday—that is, there were some typographical errors that had gotten in the carbon copies and I went over [fol. 2616] them and found those errors and the copies were amended accordingly. In other words, I found various errors in these copies as they had originally been sent out to you. Probably the plaintiff's attorney got a copy Saturday, and if so he got the copy with the typographical errors. The typographical errors were as follows: There was one change in a column, shifting the other exhibit around to this from there, but preparing practically the same information, but in another form. This is the length of mains in Group No. 3. The change that I made Saturday was suggested by no one. I made it myself.

I cannot say that either Mr. Olmstead was working under my direction or I under his. I would not say Olmstead was working under my direction, on this matter of mains. I would say I was working under his direction as to the form of these tables—that is, the final form. At least, I was deferring to his suggestions as to the arrangement. He did not tell me how they should be gotten up. He suggested about two weeks ago there should be a change in Group No. 3 with the length of parallels, that they had to be omitted and he said I should drop these out of the exhibit, because it is not taken into the total. That was before the copy was sent to the plaintiff's attorney. Mr. Olmsted worked on Sheet 250. He worked on all of the material in a way. That is, I did the work of figuring, and arranged them and Mr. Olmsted came in and we went over the figures together. I would call them back to him and he would call them back to me and we checked against the

underlying data. This was before I gave the copies to the plaintiff's attorneys. Mr. Olmsted did not check with me on [fol. 2617] Saturday when I discovered these errors and eliminated them. I called him in and showed him the change in column 3, and also the typographical errors and the exhibits, and he agreed with me that was a plain mistake. All the errors I changed. There may have been other errors in the exhibit I do not know anything about, but I do not think there are, but outside of that, they were all typographical, except this shift of parallels into the length of mains column. By typographical errors I mean errors where I gave the typewriters in the office a correct copy and they copied it wrongly. I recall one of 416 should have been 396 and the other was 36,000 and it should have been 34,000. It is carried in the summary in the correct amount. It was a simple matter of the typewriter in the office not copying it correctly. Those were the only kinds of errors outside of Group No. 3, in the sheets I have testified to. Of course, when I shifted that column in Group No. 3, that would naturally change the ratios. That meant 1/100 point of the ratios.

I did not personally put on any of these sheets references to defendants' exhibits in the prior case. That must be some sheets I have not testified to myself. I put on page No. 9, I think, references to these sub-groups, Group A-1, A-2 and so forth. I did not examine the exhibits. I examined the transcript of record, which contained copies of exhibits. I did not use that printed copy of those exhibits in preparing what I did prepare, except I checked over those old exhibits, to see if they agreed with the maps. [fol. 2618] There were some differences, I believe. It was my endeavor to make them agree with the maps. In preparing these schedules which were sent to the plaintiff's attorney, I did not use any of the records of the company except the maps, and only those given by Mr. Kingsbury and Mr. Davidson. All the information I had I took from the maps.

Of course, in making probably 10,000 measurements, there might be some slight error. For instance, measuring around a curve on a street that is curved, I would take the shorter distance, because I would not measure the exact length of the main. These 10,000 measurements were made by me

personally, except what Mr. Olmsted made. Nobody else made any. He made some of them, and I made the rest of them. I checked some of the measurements that he made, not of any of these that went into this particular exhibit, except in a general way. Some of the measurements of dead disused and smaller mains I checked. By that I mean mains that are marked on the map as disused, and some that are marked "dead," "abandoned" and "temporarily disused." I of course did not know anything about whether they are temporarily cut out or temporarily disused or abandoned or dead, except as the map shows. I simply tabulated what is shown on the maps.

I have not undertaken to do anything more than to measure on the map and tabulate instances where there are parallels within my definition of what constitutes a parallel, except in the case of small mains, 1-½, 2, 3 and 5 inches [fol. 2619] those dead and disused. With respect to those small sized mains, I took all of those that I found indicated on the map and measured them and made a table of them. I think Mr. Wolff told me in the first place to do that. That is, in respect of these smaller sizes, I made up a separate table which showed the lengths of those smaller sizes, 1-½ inch, 2, 3 and 5 inches. Aside from this tabulation of the quantities of the smaller sizes I don't believe I have undertaken to do anything else except to measure on the maps and tabulate the instances in which there are parallels, except in the case of disused mains. I measured those. I have not passed on the question of whether they are disused or not. I have simply tabulated them as disused or shown as disused. With respect to the parallels, I have not in any way passed upon the question of the engineering or other propriety of the parallels. On sheet No. 4 I believe the parallels include the Consolidated Gas Company and any other mains, whether Standard, Mutual, New Amsterdam or any other company. Of course, so far as the Mutual is concerned, I have understood that they were no longer mains owned by the Mutual Company, also with respect to the Manhattan, Equitable, the Knickerbocker and any of the other prior companies, that they are no longer operating companies in the Borough of Manhattan. I treated mains of those companies and the Mutual Company as mains of the Consolidated Gas Company in my tabulation, and

showed parallels where they existed between mains of the [fol. 2620] Consolidated Gas Company in my tabulation, and in sheets 4 and 5 I showed parallels where they existed between mains of the Consolidated Gas Company and mains of the Standard, New Amsterdam or East River Companies.

Direct examination continued by Mr. Donnelly:

In Group No. 3 there is a change that is not strictly typographical, but, with reference to the others, they are typographical errors.

Preliminary cross-examination resumed by Mr. Ransom:

Sheets 9 to 18 show all the mains in the square mile as shown on the maps—approximately a square mile. The only difference in that schedule is the sheet following; 36,000 should be 34,000. They deal with all the mains in that approximate square mile, except where there is no parallel on the same side of the street.

By Mr. Donnelly:

(Sheet 9 marked Defendants' Exhibit No. 41; Sheet 10 marked Defendants' Exhibit No. 41-A; Sheet 11 marked Defendants' Exhibit No. 41-B; Sheet 12 marked Defendants' Exhibit No. 41-C; Sheet 13 marked Defendants' Exhibit No. 41-D; Sheet 14 marked Defendants' Exhibit No. 41-E; Sheet 15 marked Defendants' Exhibit No. 41-F; Sheet 16 marked Defendants' Exhibit No. 41-G; Sheet 17 marked Defendants's Exhibit No. 41-H; Sheet 18 marked Defendants' Exhibit No. 41-I.

Sheet 4 marked Defendants' Exhibit No. 42; Sheet 5 marked Defendants' Exhibit 43.)

These are all corrected sheets.

Table marked No. 251, Sheet No. 1, was prepared by me. It is a schedule showing the 1-1/2, 2, 3 and 5-inch mains, that I found on examining the maps marked 730, inclusive. These mains are those that are active at the present time or at least those that are not shown to be dead or disused or abandoned at the present time on Manhattan Island, and

[fol. 2621] the sheet likewise shows the number of feet for each diameter of main shown on the sheet.

Preliminary cross-examination by Mr. Ransom:

I prepared this all personally under the general supervision or in collaboration with Mr. Olmsted. He checked them with me. I did the actual physical work and I would submit them to Mr. Olmsted for approval as to form. He offered no alterations or changes in this particular exhibit.

By Mr. Donnelly:

(Sheet No. 1, Table No. 251, marked Defendants' Exhibit No. 44.)

[fol. 2622] Harold M. Olmsted, called as a witness on behalf of the defendants, being duly sworn, testified as follows:

I am an engineer and accountant. I obtained preliminary education in public schools of Cleveland, Ohio. Study of accounting done at Kansas City (Mo.) School of Accountancy, Law and Finance and at Training School for Public Service (New York City). Also have degree of Bachelor of Science from Case School of Applied Science, and took certain business subjects at Kansas City School of Law. Was with Southwestern Bell Telephone Co., Kansas City, Mo., prior to the world war, making special rate studies and being in charge of rate schedules. After the war, assisted in preparation of rate case for Metropolitan Edison Company, Reading, Pa.; spent winter of 1919-1920 in New York at Training School for Public Service, work including studies in accounting, and have been in public utility rate-case work since then, involving both accounting and engineering, and including work on following cases: 1920—Meriden, (Conn.) Electric Light Company and Meriden Gas Light Co., analysis of accounting and statistical reports filed with Public Utilities Commission. Done under direction of Mark Wolff, C. P. A., New York City, for city of Meriden in connection with rate increase proposed by companies. Southern Bell Telephone Co., State of Alabama, study of reports of company filed with Interstate Commerce Commission,

and attendance at preliminary hearing regarding proposed [fol. 2623] rate increase, before Public Service Commision of Alabama. For Mark Wolff, C. P. A., expert for associated municipalities. 1921—Hyde Park Gas Co., Scranton, Pa. Analysis of construction accounts of company, study of unit costs, preparation of exhibits thereon, and testimony at hearing before Public Service Commission. For Delos F. Wilcox, of Grand Rapids, Mich., expert for the city. Michigan United Railways Co., Kalamazoo, Mich.: analysis of construction and operating accounts, study of unit cost and schedules, attended at hearing before Public Utilities Commission, and general assistance to Delos F. Wilcox, expert for the city. Minneapolis Street Railway Co.; preparation of complete cost study of company's property, derived from construction accounts and other records, and presentation of same in testimony before Minnesota Railroad and Warehouse Commission; study of schedules, maintenance accounts and payrolls, analyses of renewal reserves, and special studies of cost records, stock books, etc., for Delos F. Wilcox, expert for the city, and in association with Mark Wolff, C. P. A. 1922—Minneapolis Street Railway case—continued during first nine months of 1922. Cumberland Telephone & Telegraph Co., State of Tennessee; study of company's construction account and records, and retirement until costs. For Mark Wolff, C. P. A., expert for Public Service Commission. Shreveport (La.) Railways Company; study of company's construction and operating accounts, preparation of exhibits on same and on reproduction cost, and presentation of testimony [fol. 2624] before Public Service Commission (in 1923; see Public Utilities Reports, 1923 E., 609) For Public Service Commission, in association with Mark Wolff, C. P. A. 1923—Shreveport Railways case—continued in January. Minneapolis Street Railways case—continued. I took a four-years' course in electrical engineering in the Case School of Applied Science, graduating with the degree of Bachelor of Science in Electrical Engineering; and four years with the Bell Telephone Company in Kansas City and St. Louis, Missouri, and done engineering work for a consulting engineer in Cleveland by the name of Mr. Bean. I have worked for the Metropolitan Edison Company in Reading, Pennsylvania, and since 1920 I have worked with

Dr. Delos F. Wilcox, of Grand Rapids, Michigan, in connection with his general engineering work, and also with Mr. Mark Wolff.

I assisted in making measurements of mains and parallels on the Consolidated Gas Company's maps and in recording the information taken from those maps. I worked with Mr. Eddy in summarizing the data and showed the results of this study in parallel mains in an exhibit. Sheets which are headed "Table 250," Sheets Nos. 1, 2, 2-A, 3, 6, 7 and 8 constitute my study. From this study, the total distance in Manhattan where paralleling of a Consolidated Gas Company main exists is 316.82 miles. By "parallelling" I mean where there is a Consolidated Gas Company main in a given street and on the same side of the street with it are one or [fol. 2625] more mains, either of the Consolidated or of some other company. There are 30.76 miles where are mains in parallel none of which are Consolidated Gas Company mains, and the total length of paralleling for all mains, whether Consolidated Gas Company or not is 347.58 miles. The length of all mains found in the 316.82 miles where parallel/ing of a Consolidated Gas Company main exists was 859.46 miles. 2.71 represents the ratio of length of main to length of parallel and including the parallels where no Consolidated Gas Company main was present, the total length of mains was 922.51 miles. 2.65 represents the ratio of length of mains to the parallel distance along the side of the street. These figures I have given include all mains, irrespective of size. Eliminating mains larger than 16 inches in diameter, the length of parallels where there is a Consolidated Gas Company main is 265.13 miles. The length of the mains themselves in these parallels is 698.77 miles. 2.64 represents the ratio. The length of parallels for 16-inch mains and smaller, whether Consolidated Gas Company or not, is 290.07 miles. The corresponding length of main is 750.19 miles. 2.59 represents the ratio of length of main to length of parallel. Ratio means that taking together all of those instances where paralleling is found with these various groupings, that the mileage of mains in a certain stretch as compared with the length of that stretch itself is what this ratio is. For instance, this last [fol. 2626] one I mentioned, 2.59, means that for each mile, on the average, of a distance where paralleling exists, there

are 2.59 miles of mains in that distance; on a given side of a street only. If the ratio were an even three, one would say that there were three mains on each side of the street, or on the side of the street that we are considering, that is, one side of the street, and there are three mains on it where there is one mile paralleling and there are three miles of main in that parallel. 2.59 is simply the ratio of the number of miles of mains found in a given distance where paralleling of mains exists to that distance; that is, the ratio of the number of miles of main to the number of miles of street length that they lie in, showing what might be said to be the average number of mains on each side of the street there; only a fraction of a main would be rather difficult to conceive, of course. 36.44 miles of transfer mains in the parallels were found on the maps. 12.65 miles of parallels where the paralleling is due to the presence of transfer mains; that is, where there is not more than one main other than transfer mains. And of this 12.65 miles, 11.30 is where a Consolidated Gas Company main is present. Of the 36.44 miles of transfer mains in all the parallels, 35.05 miles is in parallels where a Consolidated Gas Company main is present. 305.51 miles of parallels where paralleling is not due to transfer mains, but where there is a Con- [fol. 2627] solidated Company main. 824.41 miles of mains other than transfer mains are in this 305.51 miles of parallels. The ratio of this number of miles of main to the corresponding length of parallel is 2.70. 334.93 miles of parallels where paralleling is not due to transfer mains for all three companies on Manhattan Island. There are 886.7 miles of main other than transfer mains in this 334.93 miles. 2.65 is the ratio of mains to parallels in that case. The ratio of 2.71 represents an average. With respect to street length, it means that for streets in which paralleling exists on one or both sides there is an average of 2.71 miles of main for each mile of street, taking only half of the width of the street, or if one main for each side of the street be considered the minimum, the length of mains in the stretches where paralleling exists is 2.71 times this minimum. There are many locations where the number of mains in a street is greater than indicated by this ratio.

Table No. 253, Sheets Nos. 1 to 7, both inclusive, was prepared by me. That gives instances of a condition, per-

haps approaching the maximum. On First Avenue between 19th and 21st Streets there are seven mains on the east side of the street and four on the west side, a total of 11 in each street, for a distance of 486 feet, ranging in size from four-inch to 24-inch. It is all shown on that Table 253, Sheets 1 to 7, both inclusive. I have also prepared charts [fol. 2628] showing the parallel mains in certain streets. The charts are marked, Table 252, Sheet Nos. 1, 2, 3, and 4. Second Avenue, 4th and Park Avenues, Seventh Avenue, Ninth and Columbus Avenues, Tenth and Amsterdam Avenues, and streets numbered 1 to 5 and 11 to 15 are the streets shown on the charts.

(Sheets No. 1, 2 and 2a of Table 250 marked Defendants' Exhibit No. 45; Sheet No. 3, Table 250, marked Defendants' Exhibit No. 45a; Sheets No. 6, 7 and 8 of Table 250 marked Defendants' Exhibit No. 45b; Table No. 253, consisting of 7 sheets, marked Defendants' Exhibit No. 246; Table No. 252, consisting of 4 sheets, marked Defendants' Exhibit No. 247.)

With respect to the district bounded by Fifth and Tenth Avenues and by 14th and 34th Streets, the data was summarized according to each different combination of the different sizes of main. 134 such combinations of mains were found in the district. Six was the greatest number of mains in any such combination in the district. The number of miles of street in the district was found and multiplied by two to give the total distance on both sides of the streets in this district. The distance so found was 46.64 miles. It represents the total length of mains in the district if there were only one on both sides of every street. For a distance of 26.28 miles there were found to be actually more mains than one on each side of the street. 87.57 miles of mains were found in this distance of 26.28 miles. .90 of a mile of transfer mains are included in that number. .66 of a mile of this .90 of a mile is where there is only one main in addition to the transfer main. Now, deducting this .66 of a mile from the 26.28 miles where there is more than one main leaves 25.62 miles where there are two or more mains other than transfer mains, and [fol. 2629] deducting the .90 of a mile of transfer main from the 87.57 miles of all mains in the parallels found in

the district leaves 86.67 miles. The ratio between the 86.67 miles of mains and the 25.62 miles of parallels is 3.38. There is an average of 3.38 miles of main for each mile on one side of a street where paralleling exists. The difference between the 86.67 miles of mains and the 25.62 miles of parallels is 61.05 miles. This 61.05 miles to the 46.64 miles of mains on the basis of one on each side of every street is an excess of that latter number. The total of the 46.64 miles of single main for each side of every street and the additional 61.05 miles is 107.69 miles, and the ratio of the 107.69 miles to the 46.64 miles is 2.31. For the district as a whole there is an average of 2.31 miles of main other than transfer main for each mile along both sides of every street. These various ratios are set forth and summarized in Table 250 on page 2-B or page 3 as now numbered, that is, page 3 as offered in evidence. Sheet 3 was on two sheets and has been combined on one. That Sheet 4—I believe it is Sheet 4 now, it was considered to be desirable to put it all on one sheet, so you will notice that the tables are shown on our Sheet 4 whereas in the original copy they were shown on a separate sheet. That is the only change there. That other sheet was omitted and the numbering moved up.

[fol. 2630] Afternoon Session

July 14, 1924.

MARTIN McHALE, defendants' witness, recalled.

Cross-examination by Mr. Ransom:

At page 9011 of the mimeographed record, referring to my appraisal of property for Mandel, a private banker, I stated that I was positive that the bank of Mandel was closed before I made my appraisal and that I did not make any appraisal for Mandel until after his institution had been closed and that I did not make an appraisal which was submitted to and rejected by the Banking Department in order to get them not to close the Mandel bank. I remember that I was a witness for the City of New York in the 44th Street condemnation proceeding. I have not any recollection that I testified I knew that the appraisal was used by Mandel for the purpose of getting a license to act

as a private banker from the Banking Department of the State of New York, and that it was afterwards that Mandel failed; and if I did, I was mistaken because Mandel's bank was closed before I made the appraisal. So, if I testified in the 44th Street condemnation case, on behalf of the City of New York, that I knew Mandel had used this appraisal to try to get a certificate from the Superintendent of Banks, and it was afterwards he was closed, I was mistaken because he did make an application for the purpose of reopening. I do not know what purpose I made the appraisal for. I was simply requested to make the appraisal, and I did so. I do not know that he used this appraisal for the purpose of his original application for a license to act as a private banker from the Banking Department of the State of New York. He used my appraisal in part, but I haven't any knowledge whatsoever that he ever submitted it to the Superintendent of Banks. I was asked the following and [fol. 2631] made the following answers after I had been interrogated as to the testimony which I gave before the Grand Jury:

"Q. In the Mandel case you had been employed by Adolph Mandel about June 9, 1914, had you not, to make an appraisal of certain real estate which he then owned?

"A. I was.

"Q. That appraisal was used by him, was it not, for the purpose of getting the license to act as a private banker from the Banking Department of the State of New York——"

And then, after objections which were overruled:

"A. I did not know at the time.

"Q. I did not ask you if you knew that it was a fact, but if it was so used by him——"

And then, after objections:

"A. Yes, I know now. I know that he did use it afterwards.

"Q. And he afterwards failed and was indicted for receiving deposits as a banker while insolvent."

I do not doubt at all that I did make those answers. In fact, it is about just the answer I would make now. In the Mandel case when Mandel was being prosecuted for obtain-

ing loans on a fraudulent basis, I did say I had appraised Mandel's property for more than it sold for in the open market, taking into consideration the condition of the market at that time. Reading from page 3722 of the record in the 44th Street case:

"Q. Would the property that you appraised for Mr. Mandel have sold for the figures you placed upon the appraisal [fol. 2632] in the month of June, 1914?"

"A. There was not much market for property of that kind in May or June.

"Q. Won't you answer my question.

"A. I do not think it would. It ought to, but I do not think it would.

"Q. Could this property have sold for the figures mentioned in your appraisals at any time during the past two years?

"A. The same answer."

That is exactly what I did say, and I say so now. I think I also testified in this Mandel case that there had been a general increase in the value of property in the lower East Side since 1910, that testimony being given in the criminal prosecution in 1915.

I made many appraisals for the Northern Bank, which failed in 1910. In fact, I was vice president of that institution and liquidated all of these loans, about $2,000,000. I went to the Northern Bank in 1908, appointed by the Superintendent of Banks, Mr. Clark Williams, and I stayed there until 1910, at which time I resigned, in April, 1910. I went there for the purpose of liquidating all of their loans, which amounted to about between two and three million dollars. I liquidated that and then resigned, because I am not a banker. Mr. Rabinowitz was never president. He was president of the Board of Directors, but he was never president of the bank. Mr. Grant was president. I could [fol. 2633] not tell you really because he was connected long before I went there, and while I was there, and I went there for the purpose of liquidating the loans he had made. I was not there at all when he was indicted or convicted. I resigned in April and he was not convicted until some time in 1911, to the best of my recollection. I resigned long before the charges were made against him. I should say it

was six or eight months. To the best of my recollection I was appointed by Clark Williams some time in February, 1908, and I stayed there until about April 1, 1910, and I had liquidated—I had accomplished what I went there for, and I resigned. I was vice president only for the purpose of liquidating the loans.

[fol. 2634] I cannot tell that the Appellate Division of the Supreme Court for the First Department ever condemned my appraisals and condemned the City of New York for presenting them. I certainly do follow the decisions of the Appellate Division.

I stated in this record at page 8965, that I appraised the Billings property in Washington Avenue in the certiorari proceedings, and I presented a valuation of that property in that case in behalf of the City of New York. I was not in the Inwood Park case, in the matter of the City of New York, 197 Appellate Division, 431, at all. That is absolutely false. I was in the Billings Estate.

In this Exhibit No. 976, with respect to Hester Street and with respect to every one of these parcels of property, I do not show the assessed value in all of them. When I said I did not know anything about the assessment, that was rather broad, I meant to say I did not base my valuation on them. I have, in many cases. There is one case there where I valued the property at $200,000 and the assessment is $70,000. So far as valuations, I do not pay any attention to assessments. I do not remember about Block 239, Lot 5. I can tell you about the assessed value of the Hester Street property which is $145,000.

In many cases, throughout Exhibit No. 976, with respect to the various parcels of property, I have shown the assessed valuations. There are cases in which I have not. I [fol. 2635] have not any assessed valuations for Block 1028, Lot 38, Block 1482, Lot 27, Block 1642, Lot 33, Block 1670, Lot 1, Block 1682, Lots 8 and 11, and Block 1712, Lot 2. I think counsel has had this book apart since I have had it. It is not in the same way in which it was when I handed it to counsel. I have not any assessed valuations for Block 2583, Lot 450, Block 3236, Lot 1, any of the Hunts Point property, containing 180 acres, the Astoria property, Block 357, Lot 1, or Block 850, Lot 2.

With respect to Block 991, Lot 1, the assessed valuation of the bulkhead and the assessed valuation on the upland are both assessed separate and I have appraised them both separate. I do not really know what that figure of $67,000 is. I am positive that that is not in my handwriting. (Referring to pencil notations.) I do not think it was when I gave the paper to counsel. I do not know whose handwriting that is, it might be counsel's. I knew nothing about it. It was not on it when counsel took the book.

I testified in the 1906-1907 80-cent gas case with respect to this property at Hester and Elizabeth Street. I heard of the sale in April, 1921, of the property at 82 Elizabeth Street, which is a part of the company's property as it [fol. 2636] now exists at this location. I do not recollect whether the property which I appraised in the 1906-1907 case comprised six lots instead of seven as the property now stands. That is a good many years ago. The additional property on Elizabeth Street is the chair factory or the furniture factory. In other words, as the property stood as I appraised it in 1906, I do not think that lot was owned by the gas company. I do not recollect giving any separate value for 82 Elizabeth Street, of the improvements adding from $22,000 to $25,000 to the value of the property. I gave one flat rate over the whole—all of the improvements. I did not make any separate computation with respect to the buildings on 82 Elizabeth Street, and I haven't anything before me from which I could give that, and I did not have the other day. Referring to the question and answer at page 9038, this question:

"Q. How did you apply that sale of this property at 82 Elizabeth Street to your valuation of the gas company's property?

"A. I knew what it was, what it sold for.

"Q. Well, how did you apply it, if at all?

"A. The building itself is worth between about $22,000 to $25,000—about $25,000, and the land would be worth about $18,000."

I think I did say that, but that was in giving the total valuation of the whole property. I did not separate it. I considered all of the buildings contained 498,722 cubic feet, which I put in at 20 cents a cubic foot for all, or $99,000,

or in round figures $100,000 for all of the improvements. I [fol. 2637] should say offhand the building on 82 Elizabeth Street would be about $25,000. I did not give it any separate value at all. But at page 9038 of this present record, it was simply an offhand answer to a question put to me and I said it probably averaged about $25,000. I said that the building was worth about $25,000 and the land about $18,000, and I so testify today. I testified that the building on all of the Hester and Elizabeth Street property, including No. 82, added about $100,000 to the value of the land unimproved. With respect to Block 239, the property situated on Elizabeth Street and Hester Street, in Willcox v. Consolidated Gas Company, I testified:

"A. The property has a front of 100 feet on Hester Street and 150 feet on Elizabeth Street. There are practically four lots on Hester Street and two lots on Elizabeth Street."

I would have to refer to my testimony.

(Witness examines testimony at page indicated.)

This property at Hester Street, aside from the lot which constitutes No. 82 Elizabeth Street, would be 100 on Hester and 150 on Elizabeth. I remember being asked in the prior case, Willcox vs. Consolidated Gas Co., with respect to the buildings on that plot this question and giving this answer:

"Q. What valuation do you put upon that parcel?

"A. $167,500 for the land. In my opinion, the buildings did not add anything to the market value of the land."

And at page 2836 of the record in the Supreme Court of the [fol. 2638] United States in that case, I remember being asked:

"Q. Now take the next Block No. 239 at the northeast corner of Hester and Elizabeth Streets. Now, the office buildings of the company on that corner are worth something, aren't they?

"A. They might be to the gas company, but my opinion is that they do not add anything to the market value of the land."

In that particular case I was asked to disregard the purpose for which the property was being used. In this particular case I was requested to give what in my opinion they did add to the market value of the land, for any purpose, including gas. In the prior case I was asked to ignore them entirely for gas purposes. That is, in the prior case I left out the possibility of their being used for gas company uses. I did say that they were not forth anything and did not add anything to the value of the land, and say so now; but there has been a great deal done to the buildings in the way of alterations, and I did thing that they did have some value; not alone for gas purposes, but for most any other purpose—for manufacturing purposes at the present time. But in the prior case I left out the possibility of their being used for gas company purposes, and in this case I have taken that into account. I did not think that they were entirely valueless, but I did not think they added anything to the market value of the land, for two reasons: The buildings do not occupy more than half the space, half the [fol. 2639] space is entirely vacant, and it is my opinion that a prospective purchaser that was going to purchase that property for any other purpose than for gas purposes would pay pretty near as much for that property without any improvements as he would with it, excepting the one, 82, which is rather—I would not say it was a modern building, but it is a comparatively new building. I do not imagine it has been erected over 18 or 20 years. It would be my opinion that these buildings are now worth $75,000 as they stand, and with the portion of the property which is available for storage yards and loading platforms vacant as they stand. Land in that neighborhood has not become more valuable. It is my opinion that the land would sell for as much now as it would in 1906 if it was vacant. In 1906 that section was the greatest speculation in the City of New York, and especially in tenements, or property in that location, and farther east—way down east of the Bowery, and in later years, in the last seven or eight or ten years, in my opinion there has been an increase in the valuation of the tenement properties there. In the 1906 case, I valued these six lots at $167,500, as shown on pages 2820 and 2836 of the record in that case. I do not know what the assessment was, and now that it is assessed for

$145,500, *is* my valuation is $148,500. In the 1906 case, I valued the parcel with its frontage on Hester Street, because at that time it was only 150 feet, whereas now it is 175 feet deep. I don't know whether at the time the City of New York was assessing it with the lots fronting on Hester Street, nor if the City of New York is assessing it today with a Hester Street frontage.

[fol. 2640] I remember being asked these questions in the 1906 gas case, page 2837 of that record, and giving these answers:

"By Mr. Matthewson:

"Q. Is it not your experience, speaking generally, that the values fixed by the assessors for the purpose of taxation are less than the value of the land?

"A. Ordinarily they are. I have known several cases where it has been far above.

"Q. But as a general proposition my question would be answered in the affirmative

"A. Oh, it think in the majority of cases, yes."

And that is exactly what I testified to. As to whether I appraised 18 of the 38 parcels belonging to the Consolidated Company at amounts less than the tax assessments, I do not know, and I do not know that my appraisal for these 38 parcels of land belonging to the Consolidated Company is about one-fourth of one per cent in excess of the tax assessments of these 38 parcels. I could not tell, without referring to my testimony, whether of the 38 parcels of land belonging to the Consolidated Gas Company, I appraised 24 of them at figures only 15 per cent in advance of those at which I appraised them 18 years ago in the 1906 case. When noting the tax assessments in my book, which is Plaintiff's Exhibit 976, I could not tell what the tax assessments on these same parcels increased in the 18 years.

I have valued Block 991, Lot 47, which is a bulkhead be-
[fol. 2641] tween 14th and 15th Streets, 226.10 linear feet of bulkhead at $45,220. As a witness in the Willard Parker Hospital case, I valued the same bulkhead. I do not just remember now what unit I took. I remember it was at $200 a foot, and that was the valuation as of January, 1907, about 16 years before June 1, 1923. In my opinion, bulk-

head rights had not increased in value. It is restricted to the same uses now as it was then. The Commissioners in that proceeding did not reject my testimony, but I think they did award a higher figure. I do not know that the award of the Commissioners in that proceeding was confirmed by the Supreme Court and paid by the City of New York without an appeal, but I assume that it was. The comparison of the assessment of this parcel by the City in 1914 at $67,000 with my valuation of $45,220 shows at just how much premium it was assessed. When I valued this bulkhead in the 1906 case I do not think I valued it at $75,000. I will not swear I did not, but I am quite positive I did not. I did not know that in 1906, when I valued it, it was assessed for $35,000. I am quite positive I did not appraise at $75,000 a bulkhead then assessed for $35,000, where now I appraise at $45,220 a bulkhead assessed by the City at $67,000. The record speaks for itself. I did not in any way take into account the tax assessments with respect to Block 991, Lots 1 and 47. I was not interested in them at all, and paid no attention to it. I cannot give you offhand any idea of the price per linear foot at which I valued [fol. 2642] this bulkhead in 1906 and 1907. I would not care to. I recognize that I am under oath and I would not care to give an offhand opinion without consulting my testimony. I do not think that property at this point has gone down since 1907, but I do not think bulkheads have gone up, either. This particular property, this bulkhead, is located between 14th and 15th Streets. I remember very distinctly testifying as follows, at page 2255 of the record in Willcox v. Consolidated Gas Company:

"Q. Now, we will take up the bulkhead property or waterfront property of the Consolidated Gas Company if you please. Which piece did you examine first?

"A. I have got between 14th and 16th Streets here as the first.

"Q. That is the bulkhead property on Tompkins Street?

"A. Yes, sir; situated between 14th and 15th Streets.

"Q. Appearing at page 2 of this exhibit. Now will you describe that property and tell us all you know about it and give us your estimate as to the value of it?

"A. There are about 30,318 square feet; in other words, 450 by 70 feet, equal to 30,318 square feet, in my opinion

worth about $2 per square foot, or $60,636. There are 446 feet 4 inches of bulkhead at $200 a foot, which would be $89,480, or a total for the property of $150,116."

The record at page 2282 speaks for itself as to whether, in the 1906 case, I appraised the land back of the bulkhead—that is, the land in Lot 1 of Block 991—at $177,435.52. I do not recollect just exactly; I would have to refer [fol. 2643] to my appraisal before I could say. I remember being asked the following at page 2226:

"Q. Now, take Block 991, Lots 26 and 50.

"A. I think there are two 991's.

"Q. Take the one bounded by Avenue D, Tompkins Street, East 15th Street and East 16th Street.

"A. That is an irregular plot situated between 15th and 16th Streets and Avenue D and Tompkins Street which I valued at $115,683.27.

"Q. Take the other parcel also appraised in Block 991, between 14th and 15th Streets.

"A. Situated between 14th and 15th Streets, Avenue D and Tompkins Street, valuation $177,435.52."

Referring to Plaintiff's Exhibit 976, if I have omitted from my computation a portion of Block 1107, Lot 7, as shown on Plaintiff's Exhibit No. 258, it has been through mistake, for I did not intend to. I have omitted the shaded part on Block 1089, Lot 1. If I have that in mind, that is west of the bulkhead line, which in my mind carries with it nothing more than a nominal value, as I considered that you did not own the land under water. I did not consider the shaded portion in my computation of square foot area west of the bulkhead line or east of the bulkhead line. This is land under water here. I did include the land east of the bulkhead line, but I included nothing west of the bulkhead line.

The part of Sheet 7 of Plaintiff's Exhibit No. 258 which [fol. 2644] is shown in shaded form extending from the bulkhead line to the pier head line I have omitted for the reason that I considered it a highway and the public had a right to sail over it, that you could not build on it and could not use it. I did not include that in my valuation. I cannot answer yes or no as to whether, in the 1906 case, I in-

cluded the shaded portion of sheet 7 which I omitted here, or whether in that case I valued that part of the property at $250,000. In the 1906 case, when I testified for the City, I did not include this property between the bulkhead line and the pierhead line. In the 1906 case, at page 2,255 of the record in the Supreme Court, I think I was asked the following questions and gave the following answers:

"Q. Now, take the next property.

"A. I have taken the next between 41st and 42nd Streets.

"Q. That is the bulkhead property appearing on pafe 5 of the exhibit?

"A. Yes, sir.

"Q. 4st and 42nd Streets. Now, will you please describe that property and tell us what your valuation of it is?

"A. There are 197 feet 6 inches of bulk-head at $250 a foot, which would be $49,375. Now, the pier rights, I have taken your exhibits, assuming they were correct, I have assumed you could erect a pier there 60 by 700, running out to the pier-head line established by the Secretary of War in 1900.

"Mr. Mathewson: You said you had 197 feet 6 inches at how much a foot?

"A. 197 feet 6 inches at $250 a foot equals $49,375.

"Q. In regard to the 41st Street property.

[fol. 2645] "A. I assume pier rights 60 by 700 feet is equal to 42,000 square feet. In my opinion the pier rights opght to be worth $6 a foot or $252,000."

I have valued in this present case the bulkhead rights between 41st and 42nd Streets at $250 per linear foot. That is the same figure at which I appraised those bulkhead rights per linear foot eighteen years ago in 1906. When I recorded the tax assessments on Block 1089, Lot 1, in my appraisal book Exhibit 976 as $1,950,000, I paid no attention whether I was omitting the assessment of $400,000 which the City placed on the bulkhead property. I did not note the tax assessment on the bulkhead property. It would not surprise me that while I had reduced my appraisal value of it to $49,375 the tax assessment since 1906 on this bulkhead property has been increased by the City of New York more than 400 per cent. In the 44th Street condemnation

proceedings, I testified as a witness for the City and I used the same unit of $250 per linear foot for bulkheads which I apply here to Block 1107, Lot 7. The award of the Commissioners in that proceeding for the bulkhead has not been awarded yet, because it is in litigation. And the award of the award of the commissioners at twice my figure was made on an erroneous figure and it is now before or about to be assigned to new commissioners. That is what I understand the legal proceedings to be; I do not know what they were. I testified on the 13th day of October, 1916, in the 44th Street condemnation proceedings, that in the preceding fifteen years bulkhead values on the North River north of 23rd Street had increased.

I have not taken into account key lots anywhere. I have added plottage in all instances in the case of parcels of more than one lot where there are two or more lots. Of course, [fol. 2646] on properties like Hunt's Point and Astoria I made those appraisals in the way in which I testified I did at Cromwell Avenue and Exterior Street, but in respect to property in the Borough of Manhattan where there are two or more lots I added 10 per cent for plottage.

Referring to Block 1089, Lot 1, I omitted the 10 per cent plottage on the 29,625 square feet of land between what would be 12th Avenue if it were opened and the bulkhead line. That is due to the fact of its being separated, or I assumed that the 12th Avenue where it was not physically opened at that location was legally opened and a portion of this was under water, and that is one of the reasons that I did not allow plottage to that particular part, 29,625 square feet. That is more than one lot.

Referring to the property at Hester and Elizabeth Streets, which in the prior case I fronted on Hester Street and which I now have fronted entirely on Elizabeth, I think I said at page 9,041 of the mimeograph record in this case that my unit figure on Elizabeth Street was $2,000 a lot higher than Mr. Stevens' figures. I do not remember as to Huntley's. I think Stevens' was $16,000 on Elizabeth and my own was $18,000. I do not know that I just recollect what Mr. Huntley's figures were, but I do recollect Mr. Stevens'. I do not recollect that I said that Mr. Stevens testified and showed, at page 2,682 of this record, that after [fol. 2647] he had fronted on Hester Street the lots which

I front there and which the City fronts there for tax purposes, and which I fronted there in the prior case, his unit on the rest of Elizabeth Street, on the Elizabeth Street frontage, were $18,000. My best recollection is they were $16,000. I would not be positive of that. If I were wrong in that respect, I would wish to withdraw the statement.

That pier at the foot of 42nd Street and 41st Street, I am not appraising it now as in the former case.

Redirect examination by Mr. Donnelly:

Mr. Frederick Grant was the President of the Northern Bank. I can look over the record of my valuations in the 1906 case between now and to-morrow morning, and come back and make whatever explanation I want as to these records. I have the valuations in the 1906 case at my office.

[fol. 2648] JOHN J. BOYLAN, a witness for the defendants, recalled, testified as follows:

Cross-examination by Mr. Ransom:

According to these figures which I have given in my testimony, and in Plaintiff's Exhibit No. 975, so far as the details are concerned, that represents my opinion and my judgment about the values of this property. The valuation of land is a matter of opinion and judgment, and I have given values based on my experience and judgment. As to my values being necessarily right as compared with those of Mr. Stevens or Mr. Huntley, I respect every man's opinion. Of course I tried to give as fair an opinion as I could of my own, but I respect everyone else's, and I assume that they have done the same thing. Mr. Stevens is considered a very good appraiser. I have given figures according to my best judgment and I recognize that other qualified experts may disagree with me and give different figures, but the figures that I have given here represent my own work and my judgment and my experience.

In addition to my experience and judgment, I have considered the sales. I went over the sales carefully and considered them in the best light that I could, from my judg-

ment and experience, and I recognize that other qualified experts might reach different conclusions from the sales pertinent to the different parcels.

I think it was 1919 and 1920 I appraised various parcels of land in the last prior case of the Consolidated Gas Company. In the testimony that I gave in the prior case of this company, I understood that was agreed on at that time that [fol. 2649] the figures given in behalf of the company were correct. As to the valuation then in that case I took the figures offered on behalf of the plaintiff. I made certain apportionments of them as to occupancy, or gave consideration and certain judgment as to what you might do with respect to portions of the property. That was the angle from which the case was approached. I did not testify to, but did make, an appraisal of a portion of the property in the prior case. I only testified as to occupancy. I do not remember, but there were several parcels out of this long list to which I have here testified that I testified to in the prior case. There are 57th Street and Kingsbridge. I am not certain as to whether I was asked about Irving Place. I know I made an examination. This schedule of my appraisal of these different items of property was prepared by me. That is, referring to Defendants' Exhibit No. 39. It was personally prepared in my office and checked by me, upon my letter head as appraiser tax specialist. It was accurately typed in my office when made. The last thing I found I had not included the building of the Irving Place Annex, and then I put it in. The written entry as to the Irving Place building is my handwriting, referring to writing on the third and fourth sheets, Defendants' Exhibit No. 39.

When I appraised Block 369, I originally appraised it with Lot 14 included at $451,269.28, and that was an appraisal which I personally made and it represented my judgment. I made an error there. I did not include Lot 14 [fol. 2650] in the appraisal. What I had in mind was the question whether or not I included the land within the line of Tompkins Street. I did not make up an appraisal of this property for this case, which included Lot 14, that is of Block 369. That is an incorrect figure that I gave you. That is in relation to Block 368. The figure I should have given in relation to Block 369, Lot 1, was $431,379. That

figure did not include Lot 14. My later figure of $411,108.46 did not include Lot 14. It never included that. I never made up a figure which included Lot 14. I had Defendants' Exhibit No. 39 copied out of the book from something I had made. I have the book. This was copied from this book—the exhibit—by my stenographer. I never appraised Lot 14—it was originally typed on there through error. That was marked out in lead pencil by me. The Assistant Corporation Counsel in charge of the case, Mr. Hertzoff, and the Deputy Attorney-General, Mr. Donnelly, told me to leave out Lot 14. That is, I would not say I was told to leave it out, but Mr. Hertzoff came to the conclusion on reading the grant that there was not any title to Lot 14.

I have not bought or sold any water front property in the Borough of Queens at any time. I have not bought or sold any industrial property in Long Island City, nor have I bought or sold any water front property in the Borough of the Bronx at any time, or any industrial or business property in that Borough. I have not, as a broker, or personally, brougtht or sold water front or industrial property in Queens or the Bronx at any time. I have not ever bought [fol. 2651] or sold any water front property in the Borough of Manhattan at any time, either personally or as a broker. I do claim to be an expert on water front property, and I am one. I did not testify in the 44th Street and 48th Street condemnation proceedings that I did not claim to be. I do not remember being asked on cross examination by Mr. Mead, at page 4772 of the record in that case, on October 20, 1916:

"Q. Now, you have not attempted to qualify in this proceeding as an expert on water front property, have you?

"A. No, sir, I have not."

I did not, because in that case I appraised all the water front and all the land under the water. I do not think the answer is correctly reported, because I appraised all the land under water in that case and I also appraised all the bulkhead rights and submitted that appraisal to the Assistant Corporation Counsel. I do not remember, because I would not answer the question that way after making

the appraisal. That is a matter of record that I made the appraisal. I did not make the answer in that way, and if the record shows that question and answer the record is in error in that particular. I assume I was asked these questions at page 4773 on the same day, in the 44th Street proceeding:

"Q. Do you know anything about the gas business?

"A. No, sir, I do not.

"Q. Do you claim to have any special expert knowledge in regard to the value of land for gas purposes?

"A. No, sir, I do not.

[fol. 2652] "Q. Or about the value of improvements used in the manufacture of gas, either structure or equipment or buildings?

"A. No, sir, I do not.

"Q. You testified that the improvements on the property before the taking did not add anything to the market value of the land.

"A. Yes, sir, I did."

I assume I made those answers. I am not a gas engineer. I do know about the value of improvements or buildings used in the gas business, but I do not pretend to know the value of gas holders, tanks, machinery and stuff used in the manufacture of gas. Those questions referred to holders on the property taken there. There was nothing but gas holders, and I do not profess to be an expert on the value of gas holders. There was a holder or holders on part of the property taken in the 44th Street condemnation proceeding. I remember that distinctly. In the prior case in which I have testified with respect to the land of the Consolidated Gas Company, I acted for the City, but the Attorney-General paid me. That was in [illegible]. I understood it was a joint case for the State and City. I am in hopes of being paid now by the City of New York.

Those figures on that sheet, in lead pencil, Exhibit No. 975, as to the parcel Block 991—Lot 1, are mine. That is, Lot 47, 44,520 is mine, and I drew the line, and the $319,389.72 is mine. Now, the 67 under the 180 is not mine, or the $247,000. I do not know whose they are. I think it is put in there by my engineer, T. W. G. Davidson. I am not [fol. 2653] positive they look like his handwriting.

With respect to Block 953, Lot 1, there appears to be an interlineation in the same handwriting, Block 953, Lot 1. That "or $10,000 per lot" is mine. I put that there. I have that opinion that these figures "67" and "247" on the sheet as to Block 991, Lot 1, are in his handwriting. I was out of town and only saw him when I got here today.

In my appraisal here with respect to the Kingsbridge property, Block 2497, Lot 132—those figures in lead pencil on that sheet are in my handwriting. As to Block 3236, Lot 1, the Kingsbridge Holder, I have taken the area as 435,500 square feet. I understood that was the figure shown on the plaintiff's exhibit. If the area is not correct, I would be perfectly willing to adopt the corrected area. I assumed the area was 435,500. I took those figures that were furnished me. I assumed that they were correct. I understood they came from the record. This diagram was made by my engineer and I assumed it to be the correct areas. In the prior case I do not remember obtaining and using the figures from page 643 of that record the area 465,000 square feet for this parcel; but I am willing, if the area is not correct, to correct it. My computation is made on square foot basis and would be the same per square foot whether the area is 465,000 or 435,000. I did not ask Mr. Alrich to give me the page of the prior record which gave the area figure which I used, and he did not refer to page 643 of the prior record which page showed an area of 465,000. I assumed I had it correctly; [fol. 2654] but I know if I did ask him, he would very gladly give it to me. He has been very courteous. What I have done is, I have taken an area of 435,500 square feet and divided that into city lots of standard size and then applied a figure per lot of such size, and if I have left out 30,000 square feet, I will be very glad to correct it.

When I recorded the tax assessments in my working papers, I did not observe that of the 38 parcels of land belonging to the Consolidated Gas Company, I appraised 17 of them at less than the amount of tax assessments as levied by the City of New York. I did not figure the tax assessments on these 17 parcels. My unit figure on the Hunts Point property is $12,000 per acre. It is $12,000 per acre on the large parcel.

THOMAS W. G. DAVIDSON, a witness for the plaintiff, being duly sworn, testified as follows:

Direct examination Mr. Ransom:

Referring to the sheet as to Block 991, Lot 1, brought by Mr. McHale, those figures in lead pencil are not mine. I did not put that on there. I do not know what "67" and the "269" or "247" or whatever it means. On Senator Boylan's sheet "67" and the "247" are my handwriting, but I am not quite sure. I do not know what the "67" means. As to whether that "67" and "247" are mine on the other copy,—if that is mine, I guess this is, too; but really I am not quite certain that it is. I did not see Mr. McHale's book from Friday noon until today or on Saturday or Sunday or this morning.

[fol. 2655] New York, July 15, 1924.

Met pursuant to adjournment.

JOHN J. BOYLAN, a witness for the defendants, resumed the stand.

Cross-examination continued by Mr. Ransom:

At page 9300 and following the record yesterday I was asked certain questions with respect to my testimony in the 44th Street condemnation proceeding and I said that those questions referred to holders on the property taken there. I said "there was nothing but gas holders, and I do not profess to be an expert on the value of gas holders." There was a holder or holders on part of the property taken. I remember that distinctly.

I do not desire to change in any respect today my answer of yesterday, other than to say that, technically speaking, the holders may not have been on the exact part taken, but they were on the property appraised by me. The map shows oil tanks and purifiers, meter houses, storage houses, etc., on the part taken. And then, as I said, there were holders on the entire parcel. Not absolutely on the part taken, but there were holders within the entire parcel as shown by the damage map. If I testified that there was

nothing but holders on the property taken, I was not in error. I do not want to confine myself strictly to the point that you can have a holder without having something else to put gas into the holder. There was part of a gas works. I was in error inasmuch as it is not exactly on the part taken, but they were on the property, all of which was appraised by me in connection with the taking. I do not [fol. 2656] wish now to testify that there were any holders on the part taken. I said yesterday that there was an error in the stenographic record at page 4772 in the 44th Street condemnation proceeding in which I was represented as having said in answer to Mr. Mead that I did not attempt to qualify as an expert on waterfront property and I said that I did not remember being asked that question and making that answer. I said "No, sir, I did not, because in that case I appraised all the waterfront and all the land under water." Then I said later, "I do not think the answer is correctly reported, because I appraised all of the land under water in that case and I also appraised all of the bulkhead rights." I do not wish to change in any respects my testimony. I do remember Mr. Mayo, the Assistant Corporation Counsel who was in charge of that case. I remember at page 4739 of the record when Mr. Mayo was examining me on direct examination with respect to my testimony, Mr. Van Benscoten stated: "I understand, Mr. Mayo, that you do not offer this witness as qualified to testify as to the value of the land under water or bulkhead rights. I think you made that statement before, but it is not on the record." "Mr. Mayo: That is correct." I remember that and I would be very glad to explain that to you. I did not testify in that proceeding as to the value of any of the land under water or as to the value of any of the bulkhead rights. I remember that Mr. Mayo said in [fol. 2657] his brief that Senator Boylan was called to testify only as to the value of the parcels on the easterly side of Twelfth Avenue and that he had not made a sufficient study of waterfront values to give him a special qualification to testify as to that class of property.

I have not in this present appraisal taken into account or made any allowance for key lots in any of these properties. I may have in the 44th Street proceeding, but I have not done it as to the same property in this case. I checked

the area which I took from the plaintiff's Exhibit with respect to the Kingsbridge holder property and I have not found that I have made any error. I did not find that the area which had been given by Mr. Alrich and which has been marked upon one of the defendant Attorney-General's exhibits in the prior case, which I used, was 465,000 square feet. I did not use 465,000 in the prior case. I looked up the prior case and the record shows, the exhibit of which I have a copy here, being Exhibit AA-257, the same area that I have used here, namely 435,500 square feet. I did not ask Mr. Alrich where I would find the area to which he testified in the prior case and in this case and he didn't give me a memorandum of the page and tell me that it was written on the defendant's copy of what was Exhibit 178 in the prior case. The first time that this matter has come up here was yesterday, when you brought it up. I [fol. 2658] have no other recollection of asking Mr. Alrich about any other area of this property, because the exhibit of the Attorney General which was prepared by me in the old case, being Exhibit AA-257, gives exactly the same area that I have used in this case as the area of the whole parcel shown on the exhibit. I do not wish to change my testimony. If it is not the correct area, I would certainly allow for a full area. I have no desire to take away a part of the area or the parcel. The unit would be the same whatever the area is and it is merely a matter of computation.

Redirect examination by Mr. Donnelly:

The explanation I desire to make of the discussion between Messrs. Van Benscoten and Mayo that was referred to by plaintiff's counsel on my cross-examination, is this: In that case, of which Mr. Charles T. Olendorf, then Assistant Corporation Counsel, had charge, there were three witnesses retained by the City, one of whom was the distinguished dean, Mr. Martin McHale, and another Pierce G. Carroll, and myself. The three of us appraised the entire property, including the land under water, bulkheads and upland, and as the case proceeded Mr. Olendorf in his judgment, on account of whatever testimony had been introduced by the Gas Company, decided that he would not use Mr. Carroll and myself on the waterfront, that he would simply use Mr. McHale. So it necessarily followed then

that when I was called I simply gave testimony as to the value of the upland and not the value of the bulkhead or the value of the land under water, but simply the upland. [fol. 2659] In testifying in the former suit in 1919, or 1920 the figures that were referred to on my cross examination here by Judge Ransom, as having been taken in the former suit were the assessed valuations. There was another reason besides what I stated yesterday, that I was told not to include it in my valuation. I tried to explain that in making my answer. That was this, that we had a consultation of the Deputy Attorney-General that was in charge of the case, together with Mr. McHale and myself, and a copy of the water grant was read.

Recross-examination by Mr. Ransom:

In the 44th Street proceeding only Mr. McHale testified with respect to the value of land under water and the bulkhead rights and Mr. Carroll and I testified as to the upland. Mr. Olendorf decided that my testimony and Mr. Carroll's tsetimony as to the value of the bulkhead and land under water was not needed. I did not advise Mr. Mayo that I was not qualified to appraise bulkhead or land under water. Mr. Mayo was not responsible for the operation of my mind and I am not responsible for the operation of his mind. If Mr. Mayo, at page 224 of his brief, stated: "Senator Boylan was called to testify only as to the value of the parcels on the easterly side of 12th Avenue, as he considered that by reason of the legal theories so intimately connected with the valuation of waterfront he had not made a sufficient study of waterfront values to give him a special qualification to testify as to that case of property." He [fol. 2660] did not consult me relative to making that statement in his brief. I know that he did not offer me to testify as to land under water or bulkhead rights, and that I have stated several times. I did not tell him that he was wrong, I never interfere with distinguished counsel. The matter was left, so far as bulkhead and land under water was concerned, only to the testimony of Mr. McHale as far as the City was concerned. And as to the upland Mr. McHale testified and also Mr. Carroll and I. I am not sure that Mr. Carroll testified. Carroll came after me and I do not know just what he did. The agreement was that he

and I were only to testify as to the upland. Mr. Olendorf to whom I referred, was Assistant Corporation Counsel. Charles T. Olendorf, who was in charge of the Real Estate Division in the Corporation Counsel's office and he had been there for about 25 or 30 years. I regard him as a very capable, competent lawyer. He had great experience on waterfront property.

Redirect examination by Mr. Donnelly:

When I referred yesterday on my cross examination to Mr. Hertzoff as the Assistant Corporation Counsel in charge of the case, I did not correctly describe his relation to this case. I know Mr. Hertzoff, for some time and I know him to be a special deputy Attorney-General, in this case.

Martin McHale, a witness for the defendants, recalled for further examination, further testified as follows:

Redirect examination by Mr. Donnelly:

I have my working sheets here. My valuation for Block No. 2497 is $200,640. I made no change in that valuation at any time. With reference to Block 1089, Lot 1 in the 1906 case, by request of the Corporation Counsel—Assist- [fol. 2661] ant Corporation Counsel—who is now Judge Burr, I was asked to assume that the Consolidated Gas Company did own pier rights of a certain dimension, which I did. Since 1906, referring to the Appleby case, which owns the two blocks to the east, namely, from 39th Street to 41st Street, there have been Court decisions which say that nothing—by direction of the Attorney General I was directed to assume the contrary for this case because of the Appelby case decision. In my valuation of Block 3236, which is the site of the Kingsbridge Holder Station, I have given the area of that plot as 435,500 square feet. I got that area from the examination of the plaintiff's exhibit which is in the library of the Corporation Counsel. It was an exhibit by the Consolidated Gas Company and which is on file in the library of the Corporation Counsel, and from that exhibit I had an engineer compute the area, which amounted to the figures which I have stated, namely, 435,-

500 square feet, for the whole parcel. That shows the metes and bounds, and from those metes and bounds I had an engineer compute the area. "Defendants' Exhibit AA-257" is the one that I referred to and examined and looked at. I intended to include the area included within the whole parcel. That is between the Harlem River Terrace and Sedgwick Avenue and West Fordham Road. The document which I handed you this morning is a set of resolutions by the Northern Bank that was presented to me and which is dated the 29th day of April 1910, marked Defendants' Exhibit No. 48.

Recross-examination by Mr. Ransom:

Clark Williams is very much alive or was yesterday. I [fol. 2662] was appointed Vice President of this bank by his request, to the Board of Directors. He recommended my appointment. I do not think that Robin was a director at that time. I think he was Chairman or President of the Board at the time these resolutions were adopted, but he had nothing to do in signing it and did not sign it. That is signed by the Cashier and President.

Thomas W. C. Davidson, a witness for the defendants, recalled, testified as follows:

Direct examination by Mr. Ransom:

Referring to Exhibit 976, which is Mr. McHale's details and working papers, and the sheet Block 991, Lot 1, on which the addition in lead pencil "67" and "247" is made to the typewritten assessed value figure of $180,000, I have examined that since I was on the stand yesterday. Those lead pencil figures are mine.

Earnest Eddy, a witness for defendants, recalled, testified as follows:

Direct examination by Mr. Donnelly:

Table 260, Sheet No. 1, was prepared by me at the request of the defendant Attorney-General, that is, the original of that was prepared. That is a photostatic copy

which I have compared with the original and found to be the same as the original. That sheet purports to be a chart showing in graphic form the first of the month wholesale prices of the U. S. Bureau of Labor Statistics, cover-
[fol. 2663] ing three groups of commodities and another group which purports to cover all the commodities. Covering the years from 1913 to 1923, both inclusive, and the months of 1924 from January to May inclusive. I charted the groups designated by the U. S. Bureau of Labor Statistics as "Metals and Metal Products," "Building Materials," "Fuel and Lighting," and another inclusive division which they designate "All Commodities." This chart was prepared by me. By laying off a horizontal scale for the years allowing two of those larger squares for each year from 1913 to 1923, and a perpendicular scale for the index numbers, allowing one perpendicular large square for change of twenty in the index number. Then by taking the tables of index prices of the U. S. Labor Bureau, these were placed on a horizontal line corresponding with the figure in the left and right hand margins for each month, placing this point at a point directly right over a point in the base line which would represent the month; that is, I moved twelve spaces to the right of each beginning of the year for each month, and after having placed those points on the charts corresponding with the index number and the month for the commodity which they purported to represent, they were connected together by lines differently designated to distinguish one commodity from another, and if they were the same kinds of lines, I cross-hatched them so that they could be easily distinguished and the eye could
[fol. 2664] follow them without difficulty.

Preliminary cross-examination by Mr. Ransom:

These prices are taken from the entire country as I understand it. Some of the wholesale prices are based on the New York market because this is a primary market for it. These figures on the chart are for the country as a whole. I do not know that it is an exhibit in this case from which I compiled this sheet and could not designate the number anyhow. The source that I compiled it from was not marked as an exhibit. There may be such an exhibit in the case. Originally it was my own idea to select

those particular things. Mr. A. S. B. Little approved them, as also did Mr. Wolff; that is, the three sub. The "All Commodities" I was instructed by either Mr. Little or Mr. Wolff—I have forgotten which now—in the first place, to take the "All Commodities," and then Mr. Little stated that those were important in a case of this kind in working up data. I picked out those three. That is my recollection of it. Originally I picked out the "Building Materials," and it was approved by Mr. Little, and Fuel and Lighting likewise.

[fol. 2665] By Mr. Donnelly:

I prepared that sheet from the reports of the U. S. Bureau of Labor Statistics, and I originally compiled it from data in the City library at 42nd Street, and also I might state that some of the subsequent ones were taken originally from standard statistics sheets, although I compared those later with the U. S. Bureau of Labor Statistics reports.

By Mr. Donnelly:

The book entitled, "United States Department of Labor, Bureau of Labor Statistics, Wholesale Prices," is what I refer to as the underlying data from which I compiled this sheet for the years 1913 to 1922 inclusive. Subsequent to that, there was a small pamphlet which you have, here. Those are the data, there is one for each month, I believe. This particular data was used for checking the figures that I have taken from the copy in the City Library; but I found them to agree; that is, apparently identical with the copy that they have.

[fol. 2666] The index numbers, that is, the first book to which you referred and the pamphlets which you show me, constitute the underlying data from which I compiled this sheet. I did not have those particular ones in my hand at the time, but they are the same.

By the Master:

I compiled them from what I found to be similar documents in the library, and checked this sheet with those documents and found it to correspond with those which I

had checked in the library, with the exception that I did not refer to those monthly pamphlets for the year 1923 and the months up to May, 1924, which is the last published, but I referred to standard statistics for those numbers.

By Mr. Ransom:

The standard statistics are the Standard Statistics of the Bureau of Price Information regarding different index numbers, which is not a government bureau but is a city or a commercial source. Their numbers, however, agree.

Cross-examination by Mr. Ransom:

This document has the same number as, and is just like, the document that I had up at the Public Library. I did not use those particular documents with respect to the period that they covered. I did not use documents exactly like them. I use something from a commercial source. [fol. 2667] I do not know who prepared the documents that I have produced, all I know is what is printed on them, and I had nothing to do with their publication. Personally, I do not know who did.

By the Master:

The chart was prepared from the pamphlets and I checked it with some of them to see whether the figures I had corresponded with the data in those pamphlets.

By Mr. Ransom:

I do not believe I could check those completely with these pamphlets.

(Table 260, Sheet 1, marked Defendants' Exhibit No. 49.)

By Mr. Donnelly:

Table 262, Sheet No. 1, was likewise prepared by me. That is, the original was prepared and that is a photographic copy. I compiled it. This sheet is a graphic representation of the monthly index numbers based on the first of the month, on the prices as computed by Bradstreet, Dun, and the Bureau of Labor Statistics. The last per-

pendicular scale is Bradstreet's index number and the inside index scale is Dun, and the Bureau of Labor Statistics, [fol. 2668] the horizontal scale represents the index number. The line to the left represents the date of the month; that is to say, the index number on January 1, 1915, is shown on the first heavy line, 1923, and the index number for February is shown on the second line. This chart (indicating) shows you February 1, 1924, for the Bureau of Labor Statistics.

(Chart marked Defendants' Exhibit No. 50.)

[fol. 2669] Cross-examination by Mr. Ransom:

Referring to the first one of the sheets of the working papers with respect to the monthly index of wholesale prices of commodities, at the top of which I say "Sources as in footnote," and the first footnote on which is "By phone from Assistant in Economics, Division of Public Library," that is a lady whose name I do not know; some of them decline to give me their names; you will have to refer to the telephone book for her telephone number. I personally got that by telephone from this lady and those were checked by me with the sources about a week ago. As to the next figure, which is shown as obtained from the Bureau of Statistics Quarterly, Miss Miller, at the Public Library, she did give me her name. I do not know from whom I got the next figure which was obtained from Dun's by telephone, and cannot give the name of the man or in what department of Dun's it is. I cannot give you the name of the lady who gave me the figures which I obtained from the Bureau of Standards Statistics Librarian by phone. It was not Miss Miller, who is the Public Librarian, and that was a commercial library. On the first sheet here with respect to the wholesale prices as given by the Bureau of Labor Statistics, the figures of which are, successively, 233, 232, 234, 245, 247, 243, 241, 231, 226, 211, 196, and 179, those twelve figures added together make the sum [fol. 2670] of 2,718, which, divided by twelve, equals 226. I have not used the figure of 147 as an average of those numbers in these exhibits at all. I may have used that on another exhibit, but it does not appear on these exhibits

at all. That is the yearly average number. I have not used that in any exhibit in this case. The mathematical average of these twelve monthly figures is not 147. Those Bureau of Labor Statistics averages are weighted averages. I do not recall that particular instance, but the Bureau of Labor Statistics averages are weighted and are not mathematical. I checked the weighting of some of them.

By the Master:

Those were current prices for four or five months, and, in order to keep the data up to date, I called up by phone and checked those against the recognized publications at the City Library, not more than, I would say, two weeks ago.

By Mr. Ransom:

By the City Library I mean the central library of the City of New York, and not the library in the Municipal Building in connection with the Corporation Counsel's office. I also had data from Dun's and Bradstreet. I would not swear that I got no figures except those later than February 24, and I gathered those each month.
[fol. 2671] I have not seen anything placed in evidence from which you could check those figures that I got by telephone. There are certain pamphlets on Mr. Donnelly's desk from which you could check a greater number. I do not think you could check the Bureau of Labor Statistics except May and April. The new monthly publication of the Bureau shows these data and index numbers totalled. I could check it without a great deal of work.

By the Master:

These pamphlets that I have here give the data from which I checked the exhibits, for the Bureau of Labor Statistics, Dun up to the present date, and Bradstreet up to January, 1924.

By Mr. Ransom:

The handwriting on these sheets is all mine, and I do not believe all those details are in my handwriting. Some is in my handwriting (referring to document shown to

witness). Referring to the year 1913, all is in my handwriting.

(Public Service Commission Report for 1919 considered in evidence as Defendants' Exhibit No. 51.)

(Public Service Commission's Report for 1920 considered in evidence as Defendants' Exhibit No. 52.)

(Public Service Commission Report for 1921 to be considered in evidence as Defendants' Exhibit No. 53.)

(Table No. 103 marked Defendants' Exhibit No. 54.)

[fol. 2672] New York July 15, 1924.

MARK WOLFF

Direct:

I am a graduate of New York University, 1910, with the degree of Bachelor of Commercial Science. I am a Certified Public Accountant of New York State, by examination passed in June, 1911, and my offices are at 50 Madison Avenue, New York City.

My experience has been as follows:

In 1911-1912, I was employed by two firms of Public Accountants as a member of their staff.

In 1913-1917, I was employed by the City of New York as Accountant, through Civil Service examination. From January, 1913, to October, 1914, I was Chief of the Costs and Statistics Division, Department of Water Supply, Gas and Electricity.

From October, 1914, to May, 1916, I audited and made an analyses of the books of seven private water companies operating in Queens and Brooklyn.

My writings at about this time were: A paper entitled, "Interpretation of Water Works Accounts," read before the New York Convention of the American Water Works Association, and another paper entitled, "Pumping Station Cost and Efficiency Records," read a year later at the Rich-
[fol. 2673] mond, Virginia, convention of the same Association.

From June, 1916, to December, 1917, I inspected and made up an analyses from reports of gas, electric, telephone and conduit companies in New York City.

From 1918 to 1924, I was in practice as Certified Public Accountant, specializing in public utility rate cases. In most of the following cases, which consitute my experience to date, my employment was directly by the municipality or state interested; in a few instances, employment was by other experts, engineers or public utility consultants. In all cases I had full charge of the accounting work done during my engagement.

Public Service Railway Company. I made an examination and report on 119 underlying companies. On behalf of the New Jersey State League of Municipalties in 1918, the cities of Newark and Jersey City in 1919, and the New Jersey State Board of Public Utility Commissioners in 1921.

The Montreal Water & Power Company, Town of Outremont, Montreal, P. Q.

Michigan Railway Company, City of Kalamazoo, Michigan.

Scranton Railway Company, City of Scranton, Pa.

Port Richmond & Bergen Point Ferry Company County of Hudson, N. J.

The Hudson & Manhattan Railroad Company Cities of [fol. 2674] Jersey City and Hoboken, New Jersey.

Public Service Railway Company, Public Service Gas Company.

Public Service Electric Company, Assessment for Taxes, City of Newark, N. J.

The New York Telephone Company, Syracuse Telephone case, City of Syracuse, New York.

The New York Telephone case, City of New York.

The Buffalo Telephone case, City of Buffalo, New York.

The Meriden Gas Light Company, City of Meriden, Connecticut.

The Meriden Electric Light Company, City of Meriden, Connecticut.

The Southern Bell Telephone & Telegraph Company.

The Alabama Telephone Case, Cities of Birmingham, Mobile and Montgomery, Alabama.

The Cumberland Telephone & Telegraph Company, Mississippi Telephone Case, Attorney-General of Mississippi, 1921 and 1923.

The Louisiana Telephone Case, City of New Orleans, Louisiana, later employed by the Louisiana Public Service Commission.

The Tennessee Telephone Case, by the Cities of Nashville, Memphis, Knoxville and Chattanooga; later employed by the Public Utility Commission of Tennessee.

The Commonwealth Water Company, by the Town of Irvington, New Jersey.

[fol. 2675] Minneapolis Street Railway Company, by the City of Minneapolis, Minnesota.

The Citizens Water Supply Company, by the City of New York.

The Hudson & Manhattan Railroad Company, by the City of New York, on rentals for Sixth Avenue extension.

The Southwestern Gas & Electric Company, by the Louisiana Public Service Commission, Gas Department, and also the Electric Department.

The Baton Rouge Electric Company, in the Gas, Electric and Street Railway Departments, by the Louisiana Public Service Commission.

The Shreveport Railways Company, by the Louisiana Public Service Commission.

The Standard Pipe Line Company, by the Louisiana Public Service Commission and the Middlesex Water Company, by the Borough of Carteret, New Jersey.

At your request I prepared a table showing the additions to and retirements from fixed capital of the Consolidated Gas Company for the five year period of 1919 to 1923, inclusive with some assistance. This is the table which you show me which is marked Table 103, consisting of one sheet.

By that I mean Table 103, Sheet 1. This table purports [fol. 2676] to show besides additions and retirements the balance on December 31, 1918, and the balance on December 31, 1923. In the various fixed capital accounts. The source of the information given on this exhibit is the company's reports to the Public Service Commission. The amounts are being rounded out by dropping the cents as near as possible. We dropped the cents and rounded out the dollars as nearly as we could in order that the table may be checked up and down and across. The second money column

indicates the sum of the additions for the five-year period, and includes a transfer of $1,182,946.72 as shown by the company in the adjustment column for the year 1923, in its report to the Public Service Commission.

Q. Now, what is the total additions in the five-year period.

Mr. Ransom: Objected to. Are we now to start trying the period prior to 1922?

Mr. Donnelly: Is the objection made to the question because the paper which I am about to offer is based upon some documents not in evidence?

Mr. Ransom: May I see them?

Mr. Donnelly: They are not physically here.

The Master: We will consider them offered and marked.

Mr. Ransom: I presume your Honor is not going to receive the reports in toto unless we are going to litigate those years.

[fol. 2677] The Master: I have admitted evidence as to the fixed capital for the entire period.

Mr. Ransom: Well, I will consent that those reports for 1918, 1919, 1920 and 1921 be considered as marked Defendants' Exhibits.

Mr. Donnelly: That offer as made is limited to the parts of the Public Service Commission reports that Mr. Wolff used for the purpose of compiling the figures shown in this exhibit I am offering.

Mr. Ransom: The reports are either offered or not offered.

Mr. Donnelly: I have the right to make my own offer, if you please.

Mr. Ransom: You have, if you have them here.

The Master: I will limit that to the fixed capital reports.

That is where I got my information from.

Mr. Ransom: I object to their being received unless the whole reports are received in evidence.

The Master: Overruled.

Mr. Ransom: Exception. Can we have them given an exhibit number? That is the 1918 and 1919 and 1920 reports.

[fol. 2678] In making up Table No. 103, I consulted pages of the Public Service Commission reports relating to the fixed capital reports. Page 20 of the 1919 report, page 22

of the 1919 reports, the same as to 1920, the same as to 1921, the same as to 1922 and the same as to 1923. Those deal with the fixed capital accounts of the company. They relate to the fixed capital accounts of the company both prior and subsequent to 1908.

Mr. Donnelly: I now offer this sheet in evidence.

Mr. Ransom: It is understood that those portions of the report are marked in evidence.

The Master: Yes, and the stenographer will give them a number.

Mr. Ransom: Subject to our checking this exhibit, if it can be checked, we have no objection. How are you going to get the balance on December 31, 1918, unless you take the 1918 report.

The Witness: That is shown in 1919 as the balance at the beginning of the year.

Mr. Ransom: That is taken as the balance as of December 31, 1918?

The Witness: Well, it has the heading as the cash cost to the beginning of the year.

(Public Service Commission Report for 1919 considered in evidence as Defendants' Exhibit No. 51.)

[fol. 2679] (Public Service Commission Report for 1920 considered in evidence as Defendants' Exhibit No. 52.)

(Public Service Commission Report for 1921 to be considered in evidence as Defendants' Exhibit No. 53.)

(Table No. 103 marked Defendants' Exhibit No. 54.)

Q. Now, what is the total additions in the five year period on Defendants Exhibit No. 54, which is your Table No. 103?

Mr. Ransom: Objected to as immaterial, the exhibit speaks for itself.

The Master: Overruled.

Mr. Ransom: Exception.

A. $20,750,893, which includes the——

Mr. Ransom: I object to his commenting——

Mr. Donnelly: Let the witness answer.

Mr. Ransom: I object. The witness has been trying to transfer [illegible]nts and now he is undertaking to say what he does.

The Witness: Which includes the transfer of $1,193,108.

Mr. Ransom: What do you mean by that——

The Witness (continuing): To the amortized investment in plant account.

I have prepared a table showing these additions for each of the five years as well as the total for the five years. And [fol. 2680] that is a table marked 103, Schedule A.

Mr. Donnelly: I offer that in evidence.

The Master: Is that prepared from the same source?

The Witness: The same source.

Mr. Ransom: That is, this was prepared only from the Public Service Commission reports?

The Witness: Yes.

Prepared under my direction by Mr. Menzer and Mr. Olmstead and checked by me.

Preliminary cross:

I swear it is correct. I have varied it somewhat from the reports—had to do so. Yes, in dropping the cents and in transferring certain items from the adjustment column to the additions column. That handwriting on this copy, I believe is Mr. Olmstead's. I would not swear to it.

Mr. Donnelly: This is offered.

Mr. Ransom: I object to it. It shows upon the face of it, in the first place, that it is not according to the report, and the witness has undertaken to make various adjustments, transfers and variations. It further appears that there have been various adjustments, transfers and variations. [fol. 2681] It further appears that there have been various notes put on in ink which were not put on by the witness, which are not in his handwriting, and about which he is only able to express an opinion that they were put on by Mr. Olmstead.

The Master: Overruled.

Mr. Ransom: Exception.

(Marked Defendant Attorney-General Exhibit No. 55.)

Direct:

Q. What is the total retirements shown on Defendants' Exhibit No. 54, Mr. Wolff?

Mr. Ransom: That is objected to. There is no foundation laid.

The Master: Is that on the documents we have here in evidence?

The Witness: Yes, it is in Exhibit 53.

A. The total retirement shown in that table is $7,785,831.

Mr. Ransom: This is all over my objection as to litigating the operations of a five year period.

A. (Continuing:) And includes certain adjustments.

I have prepared two tables, one showing the retirements 1919 to 1923, of the fixed capital installed subsequent to [fol. 2682] December 31, 1908, and Table 103, Schedule B, Sheet 1, shows the total retirements from 1919 to 1923. The first item is the retirements of the fixed capital installed prior to December 31st, 1908, the details of which are shown on a supporting table marked Table 103, Schedule C, Sheet 1, and the balance of the items on the table represent the retirements of fixed capital installed since December 31, 1908. The supporting sheets are Schedule C, schedule C is the supporting sheet for schedule B.

Mr. Donnelly: I offer these two in evidence, the one being marked Table 103, Schedule B, Sheet No. 1, and the second of which is marked Table 103, Schedule C, Sheet No. 1.

Preliminary cross:

I did not personally prepare these Schedules B and C, but I checked them personally. They are correct in the sense that we have dropped the cents. They do not agree with the Commission's reports which show both dollars and cents. So far as we could we endeavored to round off odd cents by calling in excess of 50 cents one dollar, but that was not possible to do throughout the table, for the reason that it would have been possible to do that in a straight column of figures almost entirely, but even in the straight column of figures it might be possible to have ten [fol. 2683] 49's, which would amount to $4.90, and if you were to drop all of your 49's you would be five dollars out. Our differences—I mean difficulties were multiplied by the fact that the tables read not only up and down but also across, and that was a factor which had to be considered.

So we dropped the cents and added to the cents as best we could. But the table, however, as to the particular items, does not show rounding out to the nearest dollar, for the reasons which I have given. We have made adjustments. These tables are not prepared according to the Public Service Commission reports for those years strictly. We have made adjustments by dropping the cents. We have changed the nomenclature of some of the columns. The handwriting on this sheet, referring to the notation at the foot of the sheet, I believe is Mr. Olmstead's. I would not be sure. It is not mine. I told him to put it on there. I do not know whether he did or did not. He has been in my employ for the last—he has been continuously in my employ over a period of five months, but he has been in my employ over a period of a year and a half intermittently and he has worked with me in other cases, but not in my employ, for a period of about three years. Referring also to the various notes on Table 103, Schedule A, Sheet 1, in handwriting, I told Mr. Olmstead to put those on that sheet. I would not swear that I told Mr. Olmstead, but whoever it was that [fol. 2684] put that note on there was told by me. It was either Mr. Gough or Mr. Olmstead. I do not know whether it was Mr. Olmstead or not.

Mr. Ransom: I make objection to this offer upon the grounds which I previously indicated, and upon the ground that this is not a tabulation of the report. The witness has made various adjustments which he is unqualified to make; on the further ground that we are not concerned here with litigating operations in a five-year period, which I had hoped to avoid doing. Your Honor of course has in mind that when you prove retirements you are proving operating expenses.

The Master: Objection overruled.

Mr. Ransom: Exception.

(The papers were received in evidence and marked Defendants' Exhibit Nos. 56 and 57.)

Direct:

Q. Mr. Wolff, of this total retirement of $7,785,831, how much represents fixed capital installed prior to December 31, 1908?

Mr. Ransom: I make the same objection. The exhibit speak for itself—subject to the adjustment.

The Master: Objection overruled.

[fol. 2685] Mr. Ransom: Exception.

A. $7,143,548.

As indicated by Table 103, Schedule C, Sheet 1, which is marked Defendant's Exhibit No. 57.

Q. How much of this retirement during the five year period was for fixed capital installed since December 31, 1908?

Mr. Ransom: The same objection and exception.

A. The difference between $7,785,831, the total of Exhibit No. 56, and the first item $7,143,548, or $642,283.

Q. What were the net additions for the five year period December 31, 1918, to December 31, 1923?

Mr. Ransom: Objected upon the ground that we are not called upon to litigate the five year period here. There is no issue of a five year period tendered under the pleadings.

The Master: Overruled.

Mr. Ransom: Exception.

A. The difference between the total additions of $20,750,893 and the retirements of $7,785,831, or a net addition of $12,965,062.

Q. This net addition of $12,965,062 includes the purchase of the New York Mutual Gas Light Company in 1922, does it not?

A. It does, yes.

[fol. 2686] Mr. Ransom: By that you mean the purchase of the company's property—because they did not buy the company.

The Witness: Yes. They bought the New York Mutual Gas Light Company.

Mr. Ransom: Some or most of the gas property.

The Witness: Yes.

I also prepared a table which is marked Table 103, Schedule C, Sheet No. 1. That is Exhibit 57.

Q. Mr. Wolff, have you prepared a table showing for the years 1922 and 1923 a summary of the property values of the Consolidated Gas Company as reported by it to the State Tax Department?

A. Yes, sir.

Mr. Ransom: I object to the statement in that form. Of course, he has purported to prepare a summary from portions of a report to the State Tax Department.

The sources from which I prepared that table No. 223 are the company's reports to the State Tax Department for the years 1922 and 1923. The figures shown on that table represent a transcription insofar as the items shown are concerned, with the exception of the totals, the totals being computations and additions in the case of Tangible Real Property outside of Streets, Highways, Public Waters; sub-head Land other than Private Rights of Way; and [fol. 2687] items, No. 1, Land used during the year in connection with operation of special franchises; 2, Land not used during year in connection with operation of special franchise; the next line showing an item designated as Total, which is the sum of the first two. This was a computation. Further down, near the bottom of the sheet, there is another item marked Total, which is a computation, being the sum of the total just referred to in the column Present Value and an additional item covering tangible property outside of streets, highways, public places and public waters, under the subcaption of Buildings and Other Structures and Contents.

Mr. Ransom: By "present value" you mean the heading to which there is a paster attached?

The Witness: There was a paster attached, yes.

Mr. Donnelly: I offer that in evidence.

Mr. Ransom: That is objected to. There is no foundation laid and the reports are not in evidence.

For the year 1922 I have what appears to be the original report designated under the title "Tangible Property outside of Streets, Highways and Public Places, S. P. S.," and signed by H. M. Brundage, secretary, on March 30, 1923. I have, as to the rest of the report, the financial part of the report, what appears to be a photostatic copy attested to

[fol. 2688] by Frank J. Nelson, secretary of the State Tax Department. I have 1923, what appears to be Form S and Form B, photostatic copies of tangible property outside of streets, highways and public places, and reports called "Financial." The tangible property report is signed apparently in the original by H. M. Brundage on March 1, 1924, and the Form B Financial Report also appears to have been signed, the original, by Mr. Brundage on March 31, 1924.

Mr. Donnelly: Then I offer in evidence the reports from the State Tax Department just referred to by the witness.

Mr. Ransom: I have no objection. I would like to call your Honor's attention to the footnotes which are a part of this Table No. 223 and which are contained on the exhibits, which show the basis on which the company reported the sums found by this Court and the Commission for rate purposes.

The Master: This is the rider.

Mr. Ransom: Yes—the values found by the Court in the prior case and the reference to the fact that litigation which would establish full values is in progress now.

(1922 Report marked Defendants' Exhibits Nos. 58 and 58-A; 1923 Report marked Defendants' Exhibits Nos. 59 and 59-A.)

[fol. 2689] Preliminary cross, Wolfe:

I have included the pasters which show the notes with respect to the column headed "Present Values" and the line relating to any depreciation. The tables run 223 to 226, inclusive. Those notes to which you refer have been given individual numbers, the note covering the year 1922 being Table No. 225, Sheet 2, and the note covering the year 1923 being Table No. 226. And those are the matters to which I refer on the fact of the Sheet No. 223 as the pasters attached to report, page 38, Form B, as to present value and depreciation.

Mr. Donnelly: I now renew my offer of the Table No. 223 referred to by the witness in his testimony.

Mr. Ransom: No objection.

(Marked Defendants' Exhibit No. 60.)

Direct:

No. 224 was also prepared by me from the same sources as the previous table just admitted in evidence was prepared. The figures shown therewith are transcriptions throughout, and were taken from the company's reports to the State Tax Department for the years 1922 and 1923, but not from the same Schedule 79 from which the Table No. 223 was taken.

Mr. Donnelly: I offer that table in evidence.

Mr. Ransom: On the same basis, subject to pointing out [fol. 2690] any errors by the witness in respect to his relabeling and reclassification, I have no objection.

(Defendants' Exhibit No. 62 and 63 similarly introduced.)

(Received and marked Defendants' Exhibit No. 63, consisting of three sheets.)

I prepared this. It purports to show the stock sales of domestic utilities exclusive of strictly transit companies as per transactions on the New York Stock Exchange during the week ended May 17, 1924, together with the yield or current or current return and the lowest price for the week. The source of my information respecting the make-up of this table was the Times Analist, published by the New York Times. It is a transcription in so far as all but the last column is concerned which is a computation, made by me.

Mr. Donnelly: I offer that in evidence.

Mr. Ransom: Objected to as incompetent. It comes under your Honor's previous ruling; has no bearing on any issue here.

The Master: I will exclude it.

Mr. Donnelly: Does your Honor exclude it?

The Master: Yes. It has been excluded in the Queens and in other cases.

Mr. Donnelly: May I ask the reason for the Master's ruling? that it has no bearing on any of the issues?

[fol. 2691] The Master: It has no bearing.

Mr. Donnelly: In view of the testimony of Mr. Hoyt and Mr. Allison?

The Master: It has no bearing as to the return that the company should receive, but it shows only the sales price of the stocks or bonds.

Mr. Donnelly: I except to the Master's ruling excluding it, and ask that it be marked for identification.

Mr. Murphy: Exception.

(Marked Defendants' Exhibit No. 65 for Identification, consisting of three sheets showing bond prices not received.)

A paper consisting of three sheets, each one of which is headed "Table 234" and marked respectively Sheets Nos. 1, 2 and 3. They purport to show the return to investors in public utilities securities, as taken from the advertisements by financial houses in the Commercial and Financial Chronicle for a period of approximately one year. It shows the name of the company operates, and where there is more than one state it is so designated, or where it cannot be described by a state it shows the locality or section of the country. Next the description of the security, whether first mortgage bonds or refunding improvement bonds, first lien gold bonds, and so forth. Next the rate of interest on the face of the security. Next the price at which offered. The [fol. 2692] advertised price to the public. Next, the advertised yield, which is the approximate yield stated in the advertisement. The next column shows the date of the issue of The Commercial and Financial Chronicle and the page number on which the advertisement appears; and the next column shows the number of the investment house offering the security, which is a key to a list which will follow the table.

Mr. Donnelly: I now offer in evidence the three sheets of Table No. 234.

Mr. Ransom: Objected to as incompetent; no foundation laid; and not within the issues here.

The Master: Sustained.

Mr. Donnelly: Exception.

Mr. Murphy: Exception.

Mr. Donnelly: I ask that that be marked for identification.

(Marked Defendants' Exhibit No. 66 for Identification, consisting of three sheets.)

Table 235 consists just of the one sheet. And the key which goes with it the sheet which is marked "Table 236." They were prepared by me. Table 235 purports to show

the offerings of the two investors of public utilities stocks during the period of approximately one year as shown by the issues of The Commercial and Financial Chronicle from [fol. 2693] May 5, 1923, to May 3, 1924, inclusive. It purports to show the return to investors as per the advertisements listed hereon. That is the advertisements appearing in the issues of May 5, 1923, to May 3, 1924, both inclusive. Table 236 is a list entitled "Index of stock and bond brokers," but probably more accurately described as "Index of investment houses," showing by numbers applied to eighty-eight investment houses the designations which serve as a key—numbers which serve as a key to tables 234 and 235 in the last column of those preceding tables.

Mr. Donnelly: I offer these two sheets in evidence, Tables 235 and 236.

Mr. Ransom: Just one or two questions.

By the heading "Rate of Interest per cent" column on this exhibit is the yield. The rate of interest is the advertised rate. The column would more properly read, "Rate of dividend" than "Rate of Interest." The price at which offered is the price offered to the public, and the advertised yield in per cent is the dividend rate figured on the offering price to the public. This does not in any way show the rate earned per share or rate earned on the offering price by the company.

Mr. Ransom: Objected to on the previous grounds.

Mr. Donnelly: Excluded?

The Master: Yes.

[fol. 2694] Mr. Donnelly: Exception, and I ask that it be marked for identification.

(Table 235 marked Defendants' Exhibit No. 67 for Identification.)

(Table No. 236 marked Defendants' Exhibit No. 68 for Identification.)

I prepared a table showing the additions to and retirement from the fixed capital of the Astoria Light, Heat & Power Company for the five-year period, 1919 to 1923, inclusive with some assistance. It is marked, or headed, rather, Table No. 104.

This table purports to show besides additions and retirement the balance in the fixed capital accounts of December 31, 1918, and the balances in the fixed capital accounts on December 31, 1923. The source of the information is the company's reports for the five years, 1919, 1920, 1921, 1922 and 1923 to the Public Service Commission, pages 20 and 22 of those reports.

Relating to the fixed capital accounts, the items of addition were indicated as installed during the year while the items for retirements were indicated as retired from service in the current year for four years, 1920, 1921, 1922 and 1923. In the year 1919 the form was somewhat different and some of the figures appeared under installed during the year in a sub-head entitled, "Removals and Replacements."

Mr. Ransom: You mean the Commission's form was dif-
[fol. 2695] ferent in that year?

The Witness: Yes.

The Master: The reports will be considered as marked and the stenographer will give them separate numbers.

(P. S. C. Report for 1919, considered as marked Defendants' Exhibit No. 69.)

(P. S. C. Report for 1920, considered as marked Defendants' Exhibit No. 70.)

(P. S. C. Report for 1921, considered as marked Defendants' Exhibit No. 71.)

(P. S. C. Report for 1922, considered as marked Defendants' Exhibit No. 72.)

(P. S. C. Report for 1923, considered as marked Defendants' Exhibit No. 73.)

I have already given to the stenographer the pages of those reports which constitute the sources of information for this table.

Mr. Donnelly: I now offer in evidence the table referred to by the witness, which is headed "Table No. 104, Schedule A."

The cents have been dropped in these schedules, as was done in the case of the Consolidated Gas Company. There were certain adjustments appearing in a separate column of the company's reports to the Public Service Commission

[fol. 2696] which are included among the retirements shown on No. 104, Schedule B.

We have combined the adjustments with the retirements. That is what I thought ought to be done with them.

Mr. Ransom: I object on the ground already indicated. It appears not to be a transcript from the report and involves the exercise of judgment for which the witness has not shown qualifications, and there is no basis here for litigating a five year period with respect to any items of operating expense.

The Master: Overruled.

Mr. Ransom: Exception.

I have prepared a table showing these additions for each of the five years as well as the totals for the five years.

(The paper heretofore marked Defendants' Exhibit No. 74 was thereupon withdrawn and Table No. 104 was marked Defendants' Exhibit No. 74.)

Referring, for example, to Table 104, in so far as the accounts are concerned, they are as they appear in your reports to the Commission. They are not necessarily the same as appear on your books. You have a more extensive [fol. 2697] classification on your books of account. In so far as the titles for the money columns are concerned, they are my own titles and not in accordance with your report to the Public Service Commission. The meaning of my titles, I believe, and my opinion, is the same as the meaning of your own titles. This Table A, I have already answered, is the one I have prepared showing the additions for each of the five years, as well as the total for the five years.

Mr. Donnelly: I offer that in evidence.

Mr. Ransom: I make the same objection.

The Master: Overruled.

Mr. Ransom: Exception.

(The Table heretofore marked Defendants' Exhibit No. 74 and withdrawn was thereupon marked Defendants' Exhibit No. 75.)

Q. What is the total retirement?

Mr. Ransom: The same objection as before, and the further objection that the document speaks for itself.

The Master: He may answer.
Mr. Ransom: Exception.

A. $295,274.

I have prepared a table showing these retirements in each of the five years as well as the total for the five years, by accounts. That is shown on Schedule B of Table No. 104.

Mr. Donnelly: I offer it in evidence.

[fol. 2698] Mr. Ransom: The same objection.
The Master: Overruled.
Mr. Ransom: Exception.

$105,400 of this total retirement of $395,274 represents fixed capital installed prior to December 31, 1908, as indicated by the first item of the last exhibit in the last column. I wanted to call atention to the fact that the first column of 1919, which shows the total for the year for retirements of $30,234, was not so shown in the company's report to the Public Service Commission. There was included in this figure $30,234, four items, one for $350, work and station structures; $415.87, gas tools and implements and one for $1,419.53, miscellaneous construction expenditures, and one for $177.47, interest during construction. Three of these items represent sales of what appear to be scrap material and they appear in the column entitled, "renewals and replacements," in the company's report to the Public Service Commission. The fourth item of $177.47 is an item of discount apparently, according to a footnote in the report, and these all four are shown by me in this column as deductions to a total of $30,234, being the total for the year 1919, inclusive of those four items. I have prepared a table showing the retirements for each of the five years by accounts. A. B, which shows fixed capital retirements according to the accounts for the fixed capital installed since December 31, 1908. It shows, in addition, [fol. 2699] the total amount of fixed capital retirements for fixed capital installed prior to December 31, 1908, and this total figure is reported on another table by the detail showing the retirements, year by year, by accounts, of the early fixed capital, 1908, fixed capital. Table 104, Schedule C, that is the one I just referred to.

Mr. Donnelly: I offer Table No. 104, Schedule C, in evidence.

Mr. Ransom: I make the same objection.

The Master: Overruled.

Mr. Ransom: Exception.

(Marked Defendants' Exhibit No. 77.)

The difference between the total retirements during those five years of $295,274 and the amount of such capital representing the early fixed capital installed prior to December 31, 1908, of $105,400, appearing as the first item in the last money column in this exhibit, making the retirement attributable or representing the fixed capital installed since December 31, 1908, of $189,874. The net additions as shown on Table 104 are $12,571,423, which is the difference between the total additions of $12,866,697 and the total retirements of $295,274.

[fol. 2700] Jesse B. Snow, called as a witness in behalf of defendant Attorney General, being first duly sworn, testified as follows:

Direct examination by Mr. Donnelly:

My name is Jesse B. Snow, and I am a civil engineer. I graduated from the Nantucket High School in 1866 and from Union College, Schenectady, New York, with the [fol. 2701] degree of C. E. in 1889. From 1889 to 1891 I was engineering assistant and assistant engineer on general surveys and railroad construction. From 1892 to 1898 I was in private practice at Tonawanda, N. Y. All classes of municipal work, including sewers, pavements, water works, bridges, etc. From 1895 to 1898 I was City Engineer of Tonawanda, N. Y. From 1899 to 1902, I was resident engineer on railroad location, and in direct charge of twelve miles of heavy railroad construction. From 1902 to 1904, I was Chief Engineer, Jersey Central Traction Company; Westchester, Kennett & Wilmington Electric Railway. I constructed forty miles of cross-country electric railroad. From 1904 to 1905, I was Assistant Superintendent for contractors on double tracking of the Rich-

mond Fredericksburg Potomac Railroad. From November 1905 to July 1910, I was on the construction of the Pennsylvania East River Tunnel, as follows:

From November, 1905, to March, 1906, I was inspector in compressed air, shield-driven tunnels. From March, 1906, to July, 1910, I was First Assistant to Resident Engineer in charge of construction of the two southerly tunnels from the Pennsylvania Station under 32nd Street to the center of the East River. This work included the supervision of the alignment, and construction of the rock tunnels under 32nd Street, and the compressed air, shield driven tunnels under the East River from Manhattan, also the preparation of the monthly and final estimates. [fol. 2702] In addition I prepared for the Chief Engineer monthly an itemized cost to the contractor of doing the work in the tunnels under 32nd and 33rd Streets west of First Avenue shaft. From July, 1910 to March 1911, I was Engineer and Assistant Superintendent for The Foundation Company on the reconstruction of the Hauser Lake Dam located on the Missouri River sixteen miles from Helena, Montana. From March, 1911 to May 1914, I was engineer for Canada Syndicate, Ltd., on surveys, estimates, design and reports for a large hydroelectric development. From August 1914 to July 1919, I was resident engineer for the Public Service Commission, First District, and its successors, on the construction of the Whitehall-Montague Street, Old Slip-Clark Street, 14th Street-North 7th Street, East River Tunnels. From July 1919 to August 1921, I was principal assistant engineer, New York & New Jersey Bridge & Tunnel Commissions on surveys, estimates, design and construction of the Hudson River Vehicular Tunnel. From August, 1921, to date, I am Tunnel Engineer, Board of Estimates and Apportionment, City of New York, in general charge of the preparation of contracts, plans and specifications, estimates, reports, etc., for construction of the Narrows Tunnel between the B-roughs of Brooklyn and Richmond. I am a member of the American Society of Civil Engineers.

I have been and am now familiar with the market prices of materials and the rates of pay for labor prevailing on [fol. 2703] or about June 1, 1923, used and employed in

the construction of tunnels in and about the City of New York. I heard Mr. J. Vipond Davies testify in this case to an inventory and appraisal made by him and marked Plaintiff's Exhibit No. 836, of the cost to reproduce, as of June 1, 1923, the so-called Astoria Tunnel, extending from Astoria in the Borough of the Queens to the Borough of the Bronx, and I know Mr. Davies. I have made a study of and am familiar with Plaintiff's Exhibit No. 836, as testified to by Mr. Davies. At the request of the defendant Attorney General, I made an appraisal of the tunnel to which I have already referred as the Astoria tunnel. In the preparation of the appraisal, I used the dimensions and adopted the quantities used by Mr. Davies in Plaintiff's Exhibit No. 836, and I applied unit prices to the indicated quantities, as of June 1, 1923. In preparing the estimate I used the methods adopted by contractors in preparing bids. In my opinion such prices for labor, and materials in those indicated quantities were fair and reasonable prices prevailing as of June 1st, 1923. As a result of my appraisal I prepared the schedules which you show me, setting forth the details of my appraisal of the Astoria Tunnel, except the items that are starred. The items that are starred are the same as in Plaintiff's Exhibit 836, and the items which are not starred are my [fol. 2704] figures. In this appraisal I included 7 per of the estimated cost for engineering. That includes the preliminary investigation, design, survey and supervision during construction. I did not include in my appraisal any cost for legal expense, or for administration, land and easements, taxes, equipment, shafts and tunnel headhouses, cost of financing, cost of money or interest charge. These schedules correctly set forth the appraisal of the tunnel as testified to by me. The amount stated as the total estimated cost of reproduction of the Astoria tunnel as of June 1, 1923, represents what in my judgment is the amount of the reasonable cost of reproducing the Astoria tunnel on a sub-contract basis as of June 1, 1923.

(Schedules received in evidence and marked Defendants' Exhibit No. 78, two sheets.)

[fol. 2705] New York, July 17, 1924.

Met pursuant to adjournment.

MARK WOLFF, a witness for the defendants, recalled.

Cross-examination by Mr. Ransom:

Portions of Annual Report of Consolidated Gas Company of New York to the Public Service Commission for the year 1921, relating to operating expenses, offered in behalf of the plaintiff, marked Plaintiff's Exhibit No. 977 for identification.

Portions of Annual Report of Consolidated Gas Company of New York to the Public Service Commission for the year 1920, relating to operating expenses, offered in behalf of the plaintiff, marked Plaintiff's Exhibit No. 978 for identification.

Portions of Annual Report of Consolidated Gas Company of New York to the Public Service Commission for the year 1919, relating to operating expenses, offered in behalf of the plaintiff, marked Plaintiff's Exhibit No. 979 for identification.

Portions of Annual Report of Consolidated Gas Company of New York to the Public Service Commission for the year 1918, relating to fixed capital offered in behalf of the plaintiff and marked Plaintiff's Exhibit No. 980.

Portions of Annual Report of Consolidated Gas Company of New York to the Public Service Commission for the year 1918, relating to fixed capital, offered in behalf of the plaintiff and marked Plaintiff's Exhibit No. 981 for identification.

[fol. 2706] Portions of the Annual Report of The Astoria Light, Heat and Power Company to the Public Service Commission for the year 1923, as were not offered in behalf of the defendants, offered in behalf of the plaintiff and marked Plaintiff's Exhibit No. 982.

Such portions of the Annual Report of The Astoria Light, Heat and Power Company to the Public Service Commission for the year 1922, as were not offered in behalf of the defendants, offered in behalf of the plaintiff and marked Plaintiff's Exhibit No. 983.

Portions of the Annual Report of The Astoria Light, Heat and Power Company to the Public Service Commission for

the year 1921, relating to fixed capital, offered in behalf of the plaintiff and marked Plaintiff's Exhibit No. 984 for identification.

Portions of the Annual Report of The Astoria Light, Heat and Power Company to the Public Service Commission for the year 1920, relating to fixed capital, offered in behalf of the plaintiff and marked Plaintiff's Exhibit No. 985 for identification.

Portions of the Annual Report of The Astoria Light, Heat and Power Company to the Public Service Commission for the year 1919, relating to fixed capital, offered in behalf of the plaintiff and marked Plaintiff's Exhibit No. 986 for identification.

[fol. 2707] Portions of Annual Report of The Astoria Light Heat and Power Company to the Public Service Commission for the year 1918, relating to fixed capital, offered in behalf of the plaintiff and marked Plaintiff's Exhibit No. 987, and portions of same report relating to operating expenses, offered in behalf of the plaintiff, marked Plaintiff's Exhibit No. 988 for identification.

In exhibits Nos. 60, 61, 62 and 63, I intended only to tabulate the figures under titles and the foot notes shown in the company's reports for purposes of taxation to the State Tax Department, and not exactly to make any variations of titles or any difference as to labels or classification. There is the word "see" which we left out. Instead of saying "see statement attached," we have "statement attached here." And to use the same titles as are used in the report forms to indicate the presence of the pasters or statements in the report as submitted.

My office is at No. 50 Madison Avenue. I stopped doing business under the name Mark Wolff and Associates, when I moved my office from 175 Fifth Avenue. It is Mark Wolff now. The American Public Utilities Bureau is in existence, but has not done any business for quite a little while. It has been dormant, although its office and my office are together. I moved the name along with us to Madison Avenue. The American Public Utilities Bureau was a partnership [fol. 2708] and is now a sole proprietorship. Since I testified in the New York and Queens Gas Company case the American Public Utilities Bureau has written letters but has done no work, that is, no work in the public utility

field. I remember testifying in the New York and Queens [fol. 2709] Gas Company case, at page 3502 of the mimeographed record, that the American Public Utilities Bureau "is merely an agency which seeks to get the particular city or state in touch with experts competent to do the particular work required by the situation." It is really an employment agency in that particular field, for cities, states and other public bodies. The employment in this case runs to me personally.

I am rendering bills for my services to the City of New York or its Corporation Counsel, and that applies to the Consolidated Gas Company case as well as to the Queens and the Bronx cases. When I was employed by the City of New York under the Civil Service I was employed in the Department of Water Supply, Gas and Electricity, between 1913 and 1918, up to about February 1918. My civil service title in that department was accountant, fifth grade, which is the highest grade in the service. While in that department I did not examine the books of any gas companies in New York City. I went over to the Public Service Commission and examined the reports of a number of companies and there were some figures relating to the Consolidated Gas Company, in the reports which I examined. On page 3516 of the mimeographed record in the New York and Queens Gas Company case, I answered "yes" to the question whether the work that I did in the Department of Water Supply Gas and Electricity was done under the direction of Delos F. Wilcox. I did the work in the Department under the direction of DeLos F. Wilcox.

[fol. 2710] New York, July 17, 1924.

Met pursuant to adjournment.

Victor G. Gorch resumed the stand.

Cross-examination by Mr. Ransom:

I am not qualified to say what drip oil is; I am not qualified to speak as to the difference between drip oil and water gas tar; I do not know how drip oil is produced.

I have never been in the 21st Street plant, in the 99th Street plant, in the C House at Astoria, or the D house.

These tables of mine, which are Exhibits 79, 84, 85, 86, 87 and 88 purport to show the drip oil produced at these stations as shown on the gas production statistical reports. The tabulated quantities of drip oil shown are not quantities on hand; they are quantities produced. I have undertaken here to make up tabulations in which I put in parallel columns first, the gas oil used in gallons, and second, the drip oil produced in gallons, and in the third place a per cent of drip oil recovered. The gas oil used—the figure which I have given for that is the gas oil used at the particular station; for example, on Exhibit 85 the gas oil used in the particular month and year at the 21st Street station. I put opposite that the amount of drip oil produced; but that is not because I assumed there was some relationship between the amount of gas oil used and the amount of drip oil shown at that station. I put the quantitiy of drip oil and the quantity of gas oil in parallel columns and then computed a percentage of drip oil produced because I was asked to prepare these statistics and draw them off in this [fol. 2711] manner, in this form. Mr. Little asked me to draw up this information, Mr. A. S. B. Little. This was not any idea of mine. I was asked to do this and I have simply drawn off these figures and made the computations. I do not think I am qualified to testify here that there is any relationship to be computed or taken into account between the amount of gas oil used at the 21st Street station in these months and the amount of drip oil that I have shown; I am not an engineer. I did not find any such record which showed the amount of drip oil which was accumulated and produced at the station as distinguished from the amount of drip oil that was brought into that station from the drips on the street. I would not say that I have shown here all of the drip oil at the given stations month by month, regardless of whether it was drip oil which was realized within the plant itself or whether it was drip oil brought into the plant from the drips on the various distribution mains in the vicinity; I would simply say that I tabulated them as shown for the different stations. I do not know what disposition is made of the drip oil pumped from the drips on the distribution mains in the streets, as I am not familiar with the different methods. The drip oil recovered from city drips, as shown in the report, is put in on our exhibit—on the Ex-

hibits 87 and 88. I did put that in with respect to two of the houses at Astoria where they are shown. I don't know that what is done at the Manhattan plants is that the drip oil which comes from the street drips is brought into the nearest station that has storage facilities as I did not glean [fol. 2712] any such information from these statistics. I cannot recall that I had heard that; I do not believe so,—from any source; I just tabulated it. I made no inquiry about it. I was not told that the drip oil shown at a particular station had no relation to the gas oil used at a particular station because it was not drip oil derived merely from the gas oil used at a particular station.

After I was here in Court the other day, I did not go back and check these various exhibits which I put in, up at the company's offices with the production statistics. As I recall, it is true there were changes made on a lot of the sheets, more than half of them; but the record shows what was done before I placed them in evidence. For example, there were changes made on Exhibit 85 and on Exhibit 84 and Exhibit 86, none on Exhibit 87, but changes on Exhibit 88, also changes on Exhibit 79 and on Exhibit 80, but none on Exhibit 81, 82, or 83. You mentioned Exhibits 85 and 86. There is an additional amount made there. There is no change in the exhibit, except that there is an additional amount. These exhibits 84 to 88 I took from the company's gas production statistics.

With respect to the drip oil, I did not make any tabulation for the Astoria plant as a whole, but only for the C house and D house. In the drip oil section, right in close proximity to the figures that I have purported to tabulate in my Exhibit 85, is that reference which I have just read; [fol. 2713] it was not included in my exhibit 85. At the 21st Street station for the whole year 1922, in the drip oil stock account for that station and under the title, "Drip Oil Adjustment," a decrease of 79,219 gallons in quantity of drip oil shown at that station is shown. I did not take it into account. That decrease of 20,219 gallons is explained with an asterisk referring to a note reading: "December adjustment not included in December statistics." Taking that adjustment, it would be the *the* final figure—the final credit for 21st Street station of drip oil produced. The credit for the 21st Street drip oil, 1922, is shown by the rec-

ord to be 176,781 gallons, but the produced is not. The record does not show as produced but shows as an adjustment, the final figure for the 21st Street station, not my 247,000, but 176,781 gallons. I did not take into account that adjustment. In this drip oil section of the 1922 production statistics at the 21st Street station, you will notice that at the left hand side here is the word: "Produced" and under that "Drip Oil Adjustment." Then in the drip oil section there are given the figures 247,000, with below it figures in a circle "70,219," with the note to which you have referred, and that those two figures are bracketed, indicating that they are to be taken together; they are bracketed. I took the 247,000 and ignored the deduction of 70,219 gallons which is bracketed with it because it is not in the "produced" line. Immediately under the produced [fol. 2714] line and opposite the figure of 70,219, which is bracketed and with the 247,000 figures which I did use, is the drip oil adjustment figure and the words, "Drip Oil Adjustment," but I thought I should ignore such adjustment and all similar adjustments. I ignored them on the others. I think I was consistent; I mean I ignored it on all of them.

I have done work for Mr. Wolff or Mr. Little on the monthly reports or what is called the monthly report form. I did not check up these figures as to drip oil with the monthly reports. I don't known offhand whether the figure which went into the monthly reports was my figure of 247,000 gallons or the figure shown in the production statistics of 176,781. I will look it up before I go on the stand again and see whether your *my* 247,000 figure is the figure which appears in the monthly reports and is carried into the costs of the company. I think at the 21st Street station in 1923 I found exactly the same adjustment at the end of the year. And that adjustment I wrote in on those exhibits after they had been furnished to us. I made the adjustment and took it into account for 1923 and not for 1922, at the 21st Street station. I do not know that I could answer offhand why I wrote it in the one case and not in the other. I would have to look that up and check it up to see whether there is a reason for that. I think I ignored all these adjustments that were shown in the production statistics. At 21st Street in the 1923 production statistics the deduction was shown. "Drip Oil Produced," and then

[fol. 2715] "Drip Oil Adjustment" and the two figures bracketed just as in the prior one, except that instead of being put in a circle the drip oil adjustment is here put in red. As to whether I found that any different from the drip oil adjustment in 1922 and as to whether that is or is not exactly the same thing there, namely, the figure bracketed for "drip oil produced" and the "drip oil adjustment" credited, or whether I should have taken in the 1922 adjustments as well as the 1923, I can say this—I took the monthly statements, tabulated the monthly statements, assuming them to contain all the entries, and perhaps that appeared in one year and in the other did not. The 12-month's statements may have been given to us, but—They may have been furnished together with the monthly statements. I do not recall offhand whether we did have them or not. They may have been there Monday night of this week. I asked for them Monday night. The 12-month statement may have been among them. I do not recall that they were. When I looked them over on my Monday night check, the monthly statements as distinguished from the 12-month's statement for the 21st Street, neither then nor at any other time did I see this adjustment that appeared right on the face of it. I did not take that into account. The amount in this statement for the month of December, 1922, does not appear. That is, the gallons or the amount. Neither one appears in that statement for the month. It does appear in the monthly statement for December, 1923. [fol. 2716] There was shown right on the face of the December, 1922, statement for 21st Street, very plainly written, "See 12-month's production statistics for December adjustment as to drip oil." I did not look at that 12-month's statement to see what that adjustment was. As to whether that adjustment shown on the 12-month's statement for 1922, is the same character of adjustment that is shown on the 1923 statement as an adjustment, they are both shown as adjustments. I did not find out what their character was; I didn't make inquiries and I wasn't told what they were; and I was not told the kind of tabulation I was making was worthless and could have no value whatever as indicating the relation between the quantity of gas oil use- and the quantity of drip oil recovered. The adjustment that appears on my exhibit for 1923 and the adjust-

ment in reference to 1922 seem to be similar adjustments. I did not take into account the adjustment in the 1923 exhibit except that I put this footnote there. I showed it. The only reason why it should not be shown on both, if shown on either is that it is not shown in the monthly statement for December. In other words, if instead of a note referring to the yearly statement, what is shown on the yearly statement for 1922 had appeared on the monthly statement for December 1922, I would have noted it the same as I did for 1923. I didn't inquire and didn't find out what was done with respect to drip oil was that the quantity of drip oil accumulated in the plants and the [fol. 2717] quantity of drip oil brought in from the various drips in the streets in Manhattan were added together and that, at the end of the year, that total quantity of drip oil was distributed among the different plants by an adjustment made to give effect to the ratio of the quantity of gas oil used in the different plants; I didn't go into that; I did not find that out. Take the 29th Street plant for which I have Defendants' Exhibit 86, Table 218, the case is the same in that instance, and I omitted it there. It is shown on the 12-month's statement. It also — shown on the monthly statement in connection with drip oil, written around the words "Drip Oil," warning you to "see the 12 months' period statistics for December adjustment." And the same thing is true with respect to the 12th Street drip oil for 1922, which is covered in Defendants' Exhibit No. 84. As to the 11th Street station the 12 months of 1922 production statistics as to drip oil, drip oil adjust*k*ent, and that addition of 23,363 gallons, I did not include that in my Defendant's Exhibit No. 84. The drip oil adjustment is shown. In the figure which you have just given, it is an addition of 23,363 gallons at 11th Street; it is an adjustment shown in that sum. And on the December 1922, statement, in the "Drip Oil" heading there is written in that same notation telling you to see the 12 months' production statistics for the December adjustment. On table 18 in the case of the 29th Street station the adjustment at the end of 1922 is shown as 106,749 gallons decrease. On my Defendants' Exhibit No. 87, which is Table 219 and which relates to drip oil at the C house at Astoria, for the year 1923, I have shown as drip oil recovered from the city

[fol. 2718] drips the figure 66,552 gallons. I did not take that into account though, in my quantity of drip oil produced or in my per cent of drip oil recovered, and that is a similar adjustment. In other words, in the case of the C house at Astoria this adjustment figure I have labeled "Drip Oil Recovered from City Drips." As to where I got the idea that the amount of that adjustment was the quantity of drip oil recovered from the city drips, I would have to look that up. I would have to look at the tables to say why I didn't show the adjustment for 1922. In the December, 1922, with respect to the C house which is covered in my Table 219, there is shown as a part of the figure which I purported to tabulate, an adjustment as per voucher 7019,—I have not tabulated any of these adjustments—that is in these forms. I have noted them but I have not tabulated them. It shows there right on the face of the report that I purported to tabulate adjustments as per such and such voucher, an amount of 41,638 gallons increase. I did not look up that voucher to see what it was. I didn't know that if I did look up that voucher you would find that that was the document which gave the basis of the division of the total quantity of drip oil accumulated, a division of it among the different companies on the basis of the relative quantity of gas oil used in the different plants. And with respect to the D house at Astoria—it shows right on the face of these same December, 1922, production statistics that, at the D house the December adjustment as per voucher 7149 was 74,744 gallons. I did not take that in any [fol. 2719] way into account. But the 1923 adjustment I did not put on as a footnote—that, I did not take into account, and the 1922 adjustment, I did not take into account at all. That is not noted here. I did not take it into account in my percentages.

[fol. 2720] Jesse B. Snow, a witness for the defendants, resumed the stand.

Cross-examination by Mr. Ransom:

I started in on the Pennsylvania Tunnel as inspector in the compressed—air shield—driven end of the work and I was there for, I think, three or four months, and then I

was promoted to assistant engineer. I was not a concrete inspector when I began my work. When I finished my work I was more than a concrete inspector. I supervised the entire placing of the lining. I did not handle the detail work or inspecting the mixing of the concrete at the mixer, or in placing it for an eight-hour shift. I supervised the entire placing of the lining. I supervised other inspectors who did that detail work. I began upon that work at $125 a month salary, I think. I was employed in connection with the work in 32nd Street extending eastward from the Pennsylvania station as far as First Avenue. That was what we call rock tunnel construction and a small amount of it was open-cut construction, made from the surface. The open-cut construction extended from Sixth Avenue west. From Sixth Avenue east it was all tunnel. No part of that was what we call sub-aqueous work, but part of it was carried out below mean high water. That work was similar to excavating a rock tunnel under the East River and was begun about 1906.

[fol. 2721] I do not know that at that time Mr. Davies and the firm of Jacobs & Davies were consulting engineers for the Pennsylvania Railroad in planning their New York tunnel and terminal work. Not on that division, anyway. They were not consulting engineers on that at that time. If I recollect, Mr. Jacobs conceived the idea of the Pennsylvania entering New York and made the Pennsylvania officials a report after the work got under way, but previous to the start of the work, after they accepted the report. Mr. Davies at that time was a tunnel engineer, but I think that he was devoting most of his time to the Hudson and Manhattan Railroad Tunnel. I was here when Mr. Davies testified in this case. I tried to bring out that he was the one who made the earliest investigation about the Pennsylvania Railroad enterprise. I do not know that Mr. Davies was chief engineer of the company that had been organized to build the railroad tunnels under the East River, but he was a very prominent engineer. So far as the tunnel work under the East River was concerned, he was not the chief engineer in charge of it, on the Pennsylvania to my knowledge. Alfred Noble was chief engineer of this work in 32nd Street from the Pennsylvania station to First Avenue on which I was employed. The design-

ing was done in his office. I was not in his office at the time the tunnel was designed. Of the responsible engineer in charge during the period of its construction of the work on which I was engaged between the Pennsylvania station and First Avenue, Alfred Noble was chief engineer; Charles L. Harrison was principal assistant engineer; Francis Mason was a resident engineer on the two southerly tunnels: [fol. 2722] and Mr. George Layton was engineer on the two northerly tunnels under 33rd Street. Later James H. Bryce was engineer of the tunnels driven eastward from the First Avenue shaft under 32nd Street, Mr. Layton retaining only the rock tunnels under 33rd Street. From March 1906 to July 1910, I was first assistant to one of the resident engineers—Francis Mason. He had the tunnel under 32nd Street extending from a point just east of the Pennsylvania Station about the middle of the river. In other words, his section embodied the rock tunnel under 32nd Street and a part of the compressed-air shield-driven tunnel under the East River. I received as assistant to the resident engineer $200 a month salary: my part of the work was supervising the men under me, who did the actual excavation. I prepared the monthly estimates on which the contractor was paid, for the resident engineer, who forwarded them to the chief engineer. My assistants measured material excavated and concrete placed and that was embodied in the estimate. I presume that my O. K. went in—my initials went on it. In other words, the estimate was not accepted by the resident engineer until my initials were on it. I was employed on this work in 32nd Street. I had no authority to hire or discharge men, or fix the wages or [fol. 2723] salaries of any of the men employed on the work. I did not buy any of the materials employed on the work or have any authority to change the design or construction to meet conditions which had been unforeseen. I think part of what was removed from 32nd Street, was used at Greenville and I think part of it went into the extension of Governor's Island. Greenville was the terminal of the Pennsylvania Railroad on the Jersey shore, which they were at that time constructing, and Governor's Island is one of the islands in the upper bay which at that time was being extended and I had that relatively nearby place to take this material to. I cannot tell you now how much it cost to dis-

pose of that material that was removed from the excavation. I knew then. I prepared for the chief engineer a monthly statement of the expenditures of the contractor every month; told him how much the different portions of the work would cost him. That was one of my duties there. That was to prepare the cost, both yardage and cost; to tell the chief engineer how much yardage was removed and its cost. I am not able to say anything now as to how much that removal and disposition of material cost. While I was employed on this work in 32nd Street from Pennsylvania station to First Avenue, no one was employed with me as a consulting engineer in connection with constructing a sub aqueous tunnel. That was the only work I was doing for anyone. I gave all my time to that. The [fol. 2724] depth of the Fourth Avenue tunnel is about 50 feet. Mr. Davies was in charge of building the four subaqueous tunnels under the north river for the Hudson and Manhattan Company at about that time or previous. Some of those tunnels were going on while we were constructing Pennsylvania.

I provided the chief engineer with a monthly statement of the cost of doing the work under 32nd Street west of First Avenue. It was straight tunnel work. The work was carried out all in tunnel except as I have previously stated, west of Sixth Avenue. All the excavation, all the operations were carried on below the surface by tunneling methods. This cost with which I provided the chief engineer included everything; all of the contractor's expenses for materials and plant. I reported those when I was assistant engineer in charge of the placing of concrete. I did not do any of those things up to the time that I became assistant to one of these resident engineers, but when I became assistant to the resident engineer at $200 a month I did not begin making these reports on the amount of the contractor's overheads and so forth immediately. I began to make reports on these things I should say about a year [fol. 2725] after I was appointed to that position. I knew what the contractor paid for the materials that were used on this work—I had access to his books. That is, I personally examined the contractor's books,—all the records that he produced for me. They were in his office at I think 33rd Street. Alfred Noble was this chief engineer

to whom I furnished this information. I got the contractor's overheads or undistributed structural costs from his office force, who were directed to furnish them to me.

This railroad work in 32nd Street west of Second Avenue did not involve any excavation in decomposed or crevieed rock 250 feet or more below sea level. I do not know how much the preliminary investigation for the railroad work in 32nd Street cost or how much it cost to design that railroad work in 32nd Street, or how much the surveys cost for that work. I did not know actually how much the supervision during construction cost. I did not know what the contractor's estimated cost for that railroad work in 32nd Street was. I knew at the time what the actual gross cost of the work to the contractor was, but I do not know now. I do not know how much the actual gross cost of that work to the contractor exceeded the contractor's estimated cost. He got into difficulties at the contract price, and the contract prices were modified upward. I presume [fol. 2726] I did at the time know what the railroad company's estimated cost for the work was although I would not say so positively. I knew what the actual gross cost of the work to the railroad company was, what the railroad company paid the contractor. The contractor made about three-quarters of a million dollars profit on it, as near as my recollection goes at the present time, after the figures had been revised upward. I could not say now how much was the actual over-all cost above the original estimated cost. I do not know whether the contractor would have made any profit at all under the original estimate, he did not want to go on with the work, and he got into difficulties on that basis. I do not know whether or not he could get credit on that basis. Apparently it was thought that he ought to realize some substantial profit on it, because the railroad company changed his prices, so as to permit him to realize a profit.

From March, 1911 to May, 1914, I was engineer for a Canadian syndicate on the designing of a large hydro-electric development. That was never built. The project was never carried out. That plan did not involve subaqueous tunnel work. I was the field engineer for this Canadian syndicate and I was responsible for the selection

of the site, and the determination of the major hydraulic phases of the plan; not the electrical end of it.

[fol. 2727] In 1914 I became a resident engineer for the Public Service Commission on certain tunnels under the East River. I had nothing to do with selecting the locations of these tunnels, the contracts were let for designing before I went with the Commission. I did not have anything to do with estimating the cost of the tunnels, except 14th Street. I had nothing to do with the designing of the 14th Street tunnel. I did not have anything to do with the actual negotiation of the contract for any of these tunnels, with regard to the letting of the contract. In regard to estimating the cost of the 14th Street tunnel, an estimate was prepared in the field office on which I helped. I figured the cost of doing the work, the tunnel division. Clifford M. Holland was in charge of that at that time. I do not think he was in charge of making up the estimate which went to the Chief Engineer of the Commission. We made an estimate in the office ourselves. The estimate was made for the cost of the work in the designing division by Mr. Sverre Dahm. I was under Mr. Holland in the tunnel division. I think we checked up the designing department's estimate. We were asked if those prices were right. I do not remember what we did with them, whether we revised them upward or downward. That was in 1916 and that was for the construction of 14th Street Manhattan to North 7th Street, Brooklyn. We looked the contracts over and while these various East River tunnels were being planned and [fol. 2728] the estimates being made and the contracts prepared and negotiated.

I was not up in Canada on this hydro-electric proposition. If I stated that, it is wrong, because I went with the Public Service Commission after I got through with the Canada work. There is one tunnel from Whitehall Street in Manhattan to Montague Street in Brooklyn. That wasn't completed before I came back from Canada. I turned the first shovel full of dirt on that tunnel, when they actually constructed it. I was in Canada from 1911 until the first part of 1914, and I went with the Public Service Commission in August, 1914. The contract had been let on the Whitehall Street tunnel, all the estimates prepared, and designs

and everything of that sort, before I came back from this hydro-electric proposition. The tunnel from Old Slip, Manhattan, to Clark Street, Brooklyn, that had been planned and estimated and specifications prepared and contracts prepared and bids obtained and let before I came back from Canada. The contractor who built those two tunnels—the Whitehall and Old Slip Clark Street tunnels, were Booth & Flynn, Ltd. The bids went in the name of Booth & Flynn, Ltd., and the O'Rourke Engineering Construction Company. After the bids were received, were accepted, then they formed the Flynn-O'Rourke Company and carried on the construction there for two or three years, and then later it was all assigned to Booth & Flynn. I did not know [fol. 2729] what the contractor's original estimate was for the cost of those two tunnels or what the bid price was of the contractors on those two tunnels. I learned that when the work was started and was told what they had bid. I saw the bids on the work. I did learn what the contract prices for those two tunnels were. I do not know that they cost the contractors an amount very far in excess of the estimates in the bids.

Booth & Flynn were the contractors for the East River tunnel from 14th Street, Manhattan to North 7th Street, Brooklyn. I never knew what their estimate of the cost of that work was, or what their contract price was. I thought they lost money on it, but I do not know. I think if they had handled the work a little bit differently that they might have made some money. I doubt very much whether they did make money or not, but if they did not, it was rather bad handling of the work on their part. I think they could have made money at the original bid prices and they could have done according to specifications. As a representative of the Board of Estimate and Apportionment, I was not aware that there is litigation still pending with respect to the cost of the East River tunnels.

When I came back from this hydro-electric project from Canada, my title or designation with the Public Service Commission was Resident Engineer, that was a civil service [fol. 2730] title and I was assigned to the tunnel division. I obtained an appointment by taking a civil service examination. I think the Resident Engineer title was created for

the construction of the East River tunnels. My salary when I started with the Commission was $3,001 per year. Seven of these resident engineers were assigned, or positions created, for that tunnel work, and they worked on such tunnels as were under construction. I reported immediately to Clifford M. Holland and in the first instance while I was working on these East River tunnels. He reported theoretically I guess to Mr. Ridgway, the engineer of subway construction. Sometimes he reported also to Mr. Craven and Mr. Turner, who succeeded Mr. Craven as Chief Engineer. Mr. Craven was Chief Engineer and later Consulting Engineer. They reported to the Commission who were in charge of the work.

I don't recall now who the contractors were who furnished the sand and crushed stone for the 14th Street tunnel. I could not say whether it was Widden & Gallagher or not. I think it was Henry Steers. I knew about the costs on this 14th Street job aside from the direct labor cost on the work, only in a general way. The other resident engineers were in charge of the construction of the tunnel. The Commission was really in charge of doing the work. My job was to see that the work was carried out according to the contract plans and specifications. We kept costs on it, we always kept a record of the labor. I [fol. 2731] could not do it all. I had a daily record of the amount of labor employed on various shifts and the classes of work they were doing, and I knew the rates of wages the various classes of labor were receiving, and in that way we kept the costs of the contractor for doing the work, on the job. Aside from the costs of such portions of the work as constituted the direct labor costs which I observed, I knew about the overhead costs of the contractor, only in a general way, by using my common sense and knowing just what those things ought to cost. I mean I had ideas as to what they ought to cost. I did not know at first hand knowledge what they did cost.

I had no authority to change the plans on the East River tunnel work. I think they did not furnish any crushed stone, I think they furnished what we called the subway aggregate, which was gravel and sand mixed, and at the time—if they were the contractors at the time the contractor was paying them for that. I do not think they did

furnish crushed stone or furnish sand, I think they furnished gravel and sand mixed together, what at that time was called the subway mixture. My recollection is what they received for sand or for crushed stone per yard was somewhere around $1.25 a yard. I did not know at that time that the crushed stone and sand cost the Steers Company twice what they received for it under their contract price. It did take more than double the estimated time [fol. 2732] to build the tunnel from 14th Street, Manhattan, to North 7th Street, Brooklyn. I want to bring in the fact that the specifications—that the Commissioners cut the time of the 14th Street tunnel to less than we recommended in the Tunnel Division who were in charge of the work on the downtown tunnel, but they did not take our advice on it. That is, Mr. Holland who had been in the tunnel work on the Whitehall tunnel, had found there that more time than had hitherto been estimated was required. And so when it come to making up the estimates of the 14th Street tunnel, he thought that more time should be allowed than the specifications and contract did allow the contractor. These specifications and contract were prepared by the Chief Engineer, with the advice of the engineer of subway construction and the consulting engineer, and sent over to us. Mr. Holland said, that enough time was not allowed and the Commission did not follow my judgment, or Mr. Holland's judgment. It took considerably more time than Mr. Holland had recommended to build the 14th Street tunnel.

I left the employ of the Commission five years ago this month. Up to that time no one ever employed me as a consulting engineer on a sub-aqueous tunnel. When I left the Commission five years ago, I think my salary was $4,000 and my title was still Resident engineer. I think there were [fol. 2733] five resident engineers there at that time. At the time I left the employ of the Public Service Commission five years ago, Mr. Davies was a very widely known engineer and a specialist among other fields, in the field of sub-aqueous tunnels. When I went to work as an assistant engineer on the vehicular tunnel under the North River, five years ago, I did not know that Mr. Davies had been consulting engineer on that work for some years. He wasn't consulting engineer when I went there. He was

not employed—he had made a report for the vehicular tunnel, for the Commission, along around 1912. He was designated as consulting engineer at about the time that I was also designated as the principal assistant engineer. There was no board of consulting engineers acting until October, 1919, and we took the job in July, 1919. He had been designated before, but they were not acting. It was not until October of that year 1919 that they actually started to act on the job in any way. He had been designated about the time I was. He had been designated early in 1919 or before that, as one of the consulting engineers of the vehicular tunnel. Some years before that he had made one of the original studies for the vehicular tunnel and in October of 1919 he began to act as a member of a board which had been constituted as a board of consulting engi-
[fol. 2734] neers. At that time in 1919 I went with the Tunnel Commission as principal assistant. When I started my salary was $5,400. My immediate superior *superior* there was Clifford M. Holland. He is the man who has been in the Tunnel Division of the Rapid Transit Department of the Public Service Commission. After I went with the Tunnel Commission or Mr. Holland, I went to work on a little of everything. Among other things I made an estimate of the tunnel. The estimated cost as officially announced was twenty-eight million dollars and the actual work on that tunnel has been in progress for some three years. Mr. Holland has told me that the actual cost of the work on the vehicular tunnel indicates that the total cost will exceed forty-two million dollars instead of the twenty-eight million dollars which was estimated. I included for contingencies and contractor's profit, fifteen per cent for these items of cost.

In my present position with the City of New York I am subordinate to Mr. Tuttle, the Chief Engineer, of the Board of Estimate and Apportionment. He is responsible to the Board of Estimate. He has the final say. I am subordinate to him. I prepare all of the plans and the specifications and send them to Mr. Tuttle for his approval. If he does not approve of them, he tells how he wants them changed and I make the change. He has several consultants. There never was a board of three engineers or more than three. Mr. Tuttle had two consulting engineers when

[fol. 2735] the work was first started, and later on—they were on a yearly salary basis. Later he modified that and has several consultants who are paid on a per diem basis. Mr. John T. Sullivan was appointed as one of the consulting engineers on the project, not on a per diem basis, about August 1921. He has not been doing anything with the Narrows Tunnel project, for about two years. That is, he served about a year on the Narrows Tunnel project. He was still, however, for two years more consulting engineer on an annual basis. We had quite a scrap over the location for the Staten Island Tunnel or for the shafts which are being built. It was one of the locations that I recommended. I suggested two locations. That was my second. Commissioner Whelan, Commissioner Delaney, Mr. Oxholm and Mr. Tuttle decided which one it should be.

There are different classes of rocks scattered all over Manhattan Island. The East River Rapid Transit tunnels were excavated very largely through soft mud, but there were quite a space of all-rock tunneling in the East River tunnel, all of it. Whitehall Street and Old Slip I suppose went through forty per cent either a mixed face or rock—fully forty per cent. Old Slip-Clark Street would be about the same and aside from that percentage either as mixed face or as rock, the rest was soft ground. The river sec-[fol. 2736] tion of the 14th Street tunnel was about thirty to forty per cent in rock, and the rest through soft ground.

None of these tunnels under the rivers on which I have been employed is at as great a depth as the Astoria. I was never in the Astoria tunnel while it was under construction. I was never in it at all. My information about this tunnel is derived from Mr. Davies' paper before the Society of Civil Engineers and my knowledge of it is my interpretation of Mr. Davies' paper. Mr. Davies' paper discloses that as to eighty per cent the condition, so far as rock and the like which was encountered in the construction was of the utmost geological demoralization. That is my interpretation of Mr. Davies' paper. Such demoralized geological conditions as are shown in Mr. Davies' paper represents very difficult conditions for tunneling at such a depth. As a matter of fact I never have been employed on any tunnel at as great a depth as the Astoria Tunnel. I observed from Mr. Davies' paper that the rock encountered

in the construction of the Astoria Tunnel, encountered at a depth of over two hundred feet below the surface of the river, was so fissured and decomposed that bricks, coal, oyster shells, and other refuse came through the bottom of the river. I was never employed on the driving of any subaqueous tunnel like the Astoria which was driven at a great depth without air pressure. I think, if you are go-
[fol. 2737] ing to build a tunnel comparable to the Astoria tunnel at that depth, that the information at hand now would give a contractor a pretty good idea of the abnormal conditions he would strike, and he could make a pretty close estimate. That is, I feel that with the knowledge from that previous source in building a tunnel, the contractor would start work with a much better knowledge than Mr. Davies had when he built the tunnel. I think if a contractor would take and study the reports on the Astoria tunnel, he could come to a pretty close estimate. In other words, I think that a contractor could come close to saying that he would build it for so much money. He could make a close estimate, in other words, for meeting the conditions they encountered on the previous tunnel construction. You would not know with certainty that you would encounter the same hazards and perils, even if you go ten feet under ground, and if you do not know that even ten feet under ground, you would know it still less when you are 200 feet below the bed of the river. For example, if you were building a parallel tunnel to the Astoria tunnel, in this general neighborhood and at similar depth, if you were a contractor or if you were undertaking such a job for the Board of Estimate, you could not tell whether you would strike a cross fault or not. You might be able to determine it by preliminary boring, but it would be a question that would be uncertain. Under such conditions by preliminary bor-
[fol. 2738] ings, or otherwise, it would be helpful, but I would prefer to dig out the records. You could make a pretty good guess, but you would not be able to say with certainty. On any of these things, like the question of whether you hit or miss the cross—fault, if you were wrong on your guess, you would lose a lot of money—that is, if you did not make a sufficient allowance for the hazard. If you did not miss it, I think you could make a pretty close estimate on the cost.

I have read the knowledge which was gained by Mr. Davies and I am not criticising the way in which the tunnel was built at that time. I am making an estimate of what I take the tunnel to be constructed for under the conditions described by Mr. Davies. I did not see them under construction and I have not seen them since.

In my Exhibit No. 78, my estimate of the cost of pumping for 1921 and 1922 is 98 cents a million gallon feet. My total cost of pumping would be those two items, for 1921 and 1922, or $44,220, and including plant $441,220. By pumping equipment which would have to be installed to do this pumping work, and consequently the cost of the equipment is the part of the cost of pumping on the job. This sum is to correspond with Mr. Davies's estimate of $468,944 for the cost of pumping equipment. Mr. Davies as my source of information as to the Astoria tunnel, that the high pressure drilling on the Astoria tunnel was done at 500 pounds [fol. 2739] per square inch. I was never employed in any capacity on a sub-aqueous tunnel where the drilling was done at 500 pounds per square inch.

My Item No. 4, which is for excavating the tunnel heading in rock is less than half of Mr. Davies's estimate. I derived my information about the conditions pertaining to this Astoria tunnel rock excavation from what appears in Mr. Davies's article and also my experience in driving rock tunnels and not as to rock tunnels at this portion of the East River.

On sheet No. 2 of my Exhibit No. 78, which is my estimated cost to reproduce the Astoria tunnel, with respect to some of my items of cost I have added and included, 20 per cent for contractor's profit and contingencies. This is the theory of my estimate that the contractor is to meet all of the unforeseen difficulties and hard luck out of this 20 per cent. The theory of my estimate is that a contractor can cover his organization and profit, if he is to get any, to meet all of these difficulties and hard luck out of that 20 per cent. I have made a certain estimate of what I thought it would cost the contractor to do the work and then I have added 20 per cent to that cost for his profit and meeting unexpected conditions. My estimate is 20 per cent but I put in my 20 per cent to cover what he might pay out. He might pay out a good deal

more. I think he could do it for that and the 20 per cent [fol. 2740] is put on there for his profit and to cover unexpected things—in other words, he would make 20 per cent profit. If he ran into a cross-fault, he could get through at our cost before the 20 per cent was added. That 20 per cent does not include any overhead; I want to correct that. My overhead is in, but I add my 20 per cent to my figures. I put my overhead all in there, before I added my 20 per cent. In the figure given as to the cost of the work to the contractor, I have added to the item set forth there a portion of his overhead. In other words, I have included in my estimate all of the money the contractor would pay out for his plant materials, superintendence, borrowing a certain amount of money, liability insurance, bond premium—that is all included in there. Then on top of that I add 20 per cent.

In my items down to and including 126 I have given certain costs of doing certain items of the work. In each of these items I have included a portion of the overhead. In other words, I have my underlying data and work sheets there and apportioned my overhead among the various items. I would like to make one correction. I have not added in 20 per cent to pumping plant. I forgot that. I only added 20 per cent on some of them. Those various items of these overhead costs that I have just enumerated, are included in my unit prices. With respect to ten of my items, I have not included any of those ten. I have adopted Mr. Davies's figures, that is, the ten being those [fol. 2741] which bear a star. I understood Mr. Davies included none of those overhead costs on those items. If I read his testimony right, that is the way I read it. I was present here then. If he did not include overheads on those ten items, they are not included on my exhibit. I did not add a percentage for those items. I figured out what would be the overhead cost of the contractor. In other words, I figured that the contractor's general office expense on a job of this size would be $372,200. I then charged 50 per cent of it to the bad ground work and 50 per cent of it to the good ground work, and then I separated the 50 per cent to the good ground work and 80 per cent of excavation and 20 per cent to the contractor. That reduces down to some percentage for each item.

Now, just to illustrate the matter, an item of cast iron, lighting tunnel, 228 tons. My general office expense is $5.84 a ton. As I stated previously, my general office expense I figured for the job $372,200; 50 per cent of that I charged to the work in the shafts and sound tunnel rock and the other 50 per cent to the work in the bad ground. Now that means, for the work in the bad ground, I charged $186,000, 25 per cent of that I charged to excavation, 40 per cent to test holes, 5 per cent to cast iron and 30 per cent to ground, so that makes the unit price for cast iron at $5.84.

I am familiar with Mr. Davies' estimate, which is Plaintiff's Exhibit No. 836, and the allowance made by items not classified of the amount of $462,917, and I have [fol. 2742] omitted that item entirely from my estimate. I discovered from reading Mr. Davies' contribution to the Society of Civil Engineers that a number of very massive bulkheads were necessarily built during the construction of this tunnel. It was necessary, that the bulkheads were designed to stand 250 feet of hydrostatic pressure. I assumed that is so. I discovered from Mr. Davies' estimate that these bulkheads were 14 feet thick. I do not know how much these bulkheads contain, because I never attempted to check up the concrete they contained. If it were necessary to construct 12 such bulkheads at the unit price of $25 per yard for concrete, the cost of the 12 bulkheads alone would be, I believe, over $30,000. I have included an allowance for concrete bulkheads. But not all of such concrete bulkheads as were actually built. I do not know that I gathered from Mr. Davies' paper that the last one of these bulkheads averted a disaster in that tunnel. I learned from reading Mr. Davies' papers that the bulkheads were equipped with special steel emergency doors, each five feet square, with a dropping device, held up by compressed air. I have included the cost of such installation in my exhibit in my plant costs. I mean the figures contained in my working papers.

I contemplate building a tunnel and using some different methods and building the tunnel on the same level and encountering the same kind of ground as they encountered, and in doing that work, I would do it in a different manner [fol. 2743] in certain details. In doing it under my

method, there would be omitted or eliminated certain items of expense that were included or incurred in the original construction. I assumed that Mr. Davies in his items Nos. 6, 7 and 8 gave a unit price for those items, which included the placing of any bulkheads which he considered necessary. I have figured certain bulkheads that I considered to be necessary to carry out the construction of the tunnel, but not all bulkheads which were actually built by Mr. Davies to carry out the construction of the tunnel. I learned from reading Mr. Davies' paper that for a considerable length of the tunnel the rock mass was so decomposed that it was necessary to consolidate it by drilling thousands of holes in the rock outside of the lines of the tunnel heading, and grouting cement concrete into such holes at a very high pressure. These thousands of ground holes probably required a large number of pipe, fittings, gate valves, caulking materials, steel wedges and other accessories. It isn't a fact that when I omitted an amount for such items not classified as given by Mr. Davies, that I omitted any allowance for that equipment. I think that I have included that in my plant costs.

That is what Mr. Davies has used, about five hundred feet of iron and steel lining in his tunnel. I would order that before the job started on the assumption that we would get that bad ground and I would have it there when I wanted it. Now, when Mr. Davies built the tunnel, he [fol. 2744] did not know whether he was going to strike bad ground or not. In fact, he says in his paper that, when they first struck bad ground from the Bronx shaft, they thought they were going to get through without very much difficulty. If he had had his iron to put in at that time, why, he might have saved a lot of his troubles. That is my judgment. I can picture just what that tunnel heading looked like when they struck that bad ground, so that I think if he had had his iron there and had been prepared for the bad ground, I think he would have got through with less difficulty than he did encounter. I think Mr. Davies did a wonderful job there. Other differences I contemplate in method are that, if he had had that iron there, that would have taken the place of many of the large bulkheads that he built. I do not mean to say that, in my judgment, if that iron had been there, I would say from my present knowledge that all of

these large massive bulkheads with the special doors which actually saved that tunnel from disaster would have been unnecessary; some of them would. In other words, my point of view on that is this: that Mr. Davies did a wonderful job in building the tunnel with such knowledge as he then had, and I assume he would do a wonderful job now with such knowledge as he has now. I think that he would do a better job than he did first, although he did not say so. Now I do not believe, if Mr. Davies had to construct that tunnel again, that he would go and put in concrete lining [fol. 2745] in that bad ground and then cut it out again. If Mr. Davies thought he could do a better job on it now, he might be too modest to say so. That is a fault of engineers. That was one of their great difficulties: that they did not have that ready. In another place when I struck that bad ground first I would get my diamond drills in there and try to find the bad seam. In the original construction, as I read it, they did not get the diamond drills in there quite quick enough. Consequently they ran into some very hard work to overcome the difficulties. In other words, those are things that we know now. When I struck that bad ground, I would start drilling my holes only a couple of feet deep, using half a stick of powder, and as we say in rock tunnelling, taking the rock out by the spoonful. That is, of course an expensive operation and a slow operation, but it is a safe operation. I would get some men down there that stayed in that tunnel heading every minute, that knew sound rock tunnelling from A to Z. I do not know whether Mr. Davies had men of that sort there or not. There are a lot of men who say they have that experience and when they get the job, they do not make good. There are other men who say that they have experience of that sort and when they get on the job somebody else won't let them use it. In driving a tunnel, I find this—that the engineer and the superintendent can get a lot of information out of the fellows that are actually down in the heading and [fol. 2746] doing the work. When you are down in the heading doing the work, I find that you cannot get information that you could give to the men in charge if they wanted it. I have my diamond drilling in the same as he has. It is not in the difference between my cost of diamond drilling and his cost. The largest difference between Mr. Davies'

and my estimate is in the sound rock tunnelling. Now, that is the largest difference. I based mine on working out the actual gangs of men and each class of labor that I thought would be necessary to carry on the work, and then I worked out the time that they would be doing that work, so that when I got through I had the total amount of money that they would pay for the cost of carrying on the excavation of rock in good ground. Mr. Davies in his testimony stated that he did not figure it on the basis of working out the number of men, and so forth, required, but he took bids which had been received along in 1913, and then he equated them and got his result in that way. That, I think, is the gist of Mr. Davies' testimony. That is, he took the price at which various contractors had bid on various classes of tunnel work previously and recently. All the bids that there were. He took those bids and then he equated them and got his answer. Now, my way of doing that is that I worked out the actual number of men and the actual number of days that I thought it would take and that resulted in the difference in our estimates. It might result in this—that one man would say, "Why, I want ten men to do this [fol. 2747] piece of work," and another man might say that five could do it. It may not result from the fact that Mr. Davies has a more serious feeling than I have about the hazards and obstacles that would be encountered if the work were to be done over again. He didn't add anything for the hazard of the work. In his testimony, as I remember it, he said that this $462,000 item included materials which were not included in these other items. His testimony says that the only item he named there was reinforcing rods. I assumed that that time of six per cent was in there simply as we make out a preliminary estimate. He states, as I recall it, that he had looked over various bids and in addition to these items here he found that the city contract included other items that amounted to about six per cent. By "these items here" I mean 1 to 25. He has 1 to 25. I had one more than that. I think that I have included everything in my estimate except the possibility that I have not included reinforcing rods but that is the only thing that I can think of that was left out, if there were any used. It is not the custom of contractors' men nowadays doing work of this large character to include any item of that general

nature to take care of items not specifically set forth. For instance, here is a bid of the Hudson River Vehicular Tunnel. That has all of these items in here. Now, some of them are what we call nominal items. That is to say, they do not expect to do any work under that item, but they put it in so that in case that comes up, why, they have got money [fol. 2748] enough without going back to the city fathers to get any more money. Now, for instance, we will take here is an item 120 F here, changing 8 inch cast iron water pipe—changing 16 inch cast iron water pipe, 10 feet. We did not take any of it and they just put in 10 feet of it to get a price. Those are the items that Mr. Davies, as I understand it, expects to cover in this six per cent of items not classified. They included, in addition to a certain list of work that they expect to do, everything else that they might possibly have to do at some unit price. I understand that Mr. Davies provides six per cent for items not classified for certain things that they may use that he has not provided for in these other items. In Mr. Davies' estimate I took it that he had included everything in there that they did in the tunnel. If we were making a preliminary estimate, we would add on five per cent for contingencies in a preliminary estimate. I assumed that this six per cent on Mr. Davies' table was a provision for contingencies and omissions. That is, for items that they might use, I assumed that.

[fol. 2749] New York, July 18, 1924.

Met pursuant to adjournment.

BENJAMIN COHEN, a witness for the defendants recalled.

Direct examination by Mr. Donnelly:

I am an accountant. I was appointed as accountant by the Public Service Commission for the First District, New York State, in March 1918, as the result of an open competitive examination and remained with the Commission until November 1923.

During the first year with the Commission I was employed in the Bureau of Statistics and Accounts in the examination and correction, or verification of the annual

or other reports filed by gas, electric, street railroad and bus companies under the jurisdiction of the Commission. When occasion required I checked reports or parts thereof to the companies' books, criticized the companies method of reporting or its manner of keeping their books.

The following year I was assigned as assistant to the accountant in charge of the Commission's audit of the books of the Consolidated Gas Company in the gas rate litigation of 1919 and 1920 involving the 80 cent rate (Consolidated v. Newton). In that case I prepared schedules, with the help of several assistants, which were made exhibits, and assisted counsel in cross examination of witnesses.

In the trial of the New York and Queens cases in 1920, which followed that of the Consolidated, I had charge of the audit of the company's books, was the Commission's accounting witness, introduced exhibits in evidence, and assisted counsel in cross examination of witnesses and preparation of briefs.

[fol. 2750] I had charge of the audit, and performed similar work in the trial of the subsidiaries of the Consolidated, that is the Central Union Gas Company, Northern Union Gas Company, Standard Gas Light Company, New Amsterdam Gas Company and Mutual Gas Light Company. In some of these cases, I was a witness; in the others I did not testify.

During the same period (1920 and 1921) I also examined the books of the New York, Richmond Gas Company in its rate litigation in the State Court, was the defendants' accounting witness and assisted counsel in the conduct of the case. In all these cases I had several assistants working under my direction.

When the Commission was reorganized by the separation into the Transit Commission and the Public Service Commission it withdrew from the litigation, whereupon I was transferred to the latter Commission as assistant to the Chief Accountant, located in New York. In that capacity I had charge under the direction of the Chief Accountant of accounting work in connection with application for changes in rates by gas, electric, railway and bus corporations which were referred to the New York Office or which were heard in New York, sat at hearing with Commissioners, assisted them in the conduct of the cases and in the preparation of their opinions and decisions. I also did similar work in

capitalization cases that were handled in New York. I had about ten assistants on this work.

On the resignation of the Chief Accountant in 1922 and during his prior absence, I was put in charge of the New York office of the accounting division. During this period I [fol. 2751] had charge of its accounting work in case 79, in which case the Commission inquired into the operation and costs of the gas companies in New York City. I also had charge of the preparation of that part of the Commission's annual report which covered the New York City companies, the examination of companies' annual returns, correspondence relative thereto and the correction thereof.

Matters affecting rates in New York City and vicinity were referred to me by the Commission for report as well as other matters pertaining to the finances and operations of the companies. I resigned from the Commission in November, 1923, and have since been giving most of my time to the Attorney General's office in the present litigation involving the dollar gas law, working on the books of the Consolidated Gas Company, Brooklyn Union Gas Company, New York and Queens Gas Company and Kings County Lighting Company. In the latter two cases I was a witness for the defendants.

At the request of counsel, I prepared a table taken from the Consolidated Gas Company's book of costs, Street Main Record. I think the number of the book is No. 9 and it reflects certain costs of laying mains in the year 1922. That book is No. 9 if my recollection is correct; I would not be sure.

(Table No. 233 received in evidence and marked Defendants' Exhibit No. 90.)

I prepared Table No. 232, which bears the heading "Consolidated Gas Company of New York, Mains Laid in 1923." This table is exactly similar to the table that I just described for the year 1922, and is taken from the same source and made up in the same way, containing the same [fol. 2752] data for the year 1923 as were just submitted for the year 1922, and taken from the same sources as testified with respect to the table just received in evidence. I started its preparation some time about three months ago.

(Table No. 232 received in evidence and marked Defendants' Exhibit No. 91.)

This paper headed Schedule of Insurance Covering the Property of Consolidated Gas Company of New York, and bearing underneath that the date "January 1st, 1923," was also prepared by me. That was prepared under my direction from a record furnished to me by Mr. Davidson, Assistant Secretary of the Consolidated Gas Company about two months ago. It is copied from an original paper that was given to me by Mr. Davidson. I asked him for a record which would show the amount of fire insurance which the Consolidated Gas Company carried with the first insurance trustees, and this statement was given to me as representing the answer to that question. I think he told me that Mr. Alrich was one of the gentlemen who either made or checked the valuations for insurance purposes which are placed upon this property contained in this schedule. It reads: "That in all cases the foundations of buildings or parts of plants resting thereon were not included in the company's valuations for insurance purposes."

(Schedule offered in evidence in behalf of defendants and marked Defendants' Exhibit No. 92 for Identification.)

New York, July 21, 1921.

[fol. 2753] Met pursuant to adjournment.

A. S. B. Little, a witness in behalf of the defendants, being duly sworn, testified:

Direct examination by Mr. Donnelly:

I am retained by the Attorney-General of the State of New York as engineer in charge of the work connected with all the gas cases now pending in the Federal Court, including the Consolidated Gas Co. of N. Y. I am also under retainer by the City of New York, in charge of public utility rate investigations; and under the terms of that yearly contract, I am permitted to, and have in the past three and a half years had charge of engineering work in gas rate cases and for other municipalities and for other States at the places named hereinafter.

I am 45 years old. After preliminary education at public schools in West Ham, followed by three years Academic

training and two years under private tutors, in England, and technical engineering at the Science and Art Schools, Stratford, England, and Gordon's College, Aberdeen, I entered the employ of the New Conveyor Co., Ltd., London, in 1893. In 1894 I was made an apprentice engineer to Barry Henry & Co., Aberdeen, specialists in gas apparatus construction; and in 1895-6 was apprentice engineer to Happers Ltd. Aberdeen, specialists in power generation and transmission machinery. From 1896 to 1905 I was employed by a group of affiliated companies specializing in gas and electric plant designs and construction, power gas production apparatus, coal mining and cleaning machinery, [fol. 2754] structural steel building construction, and labor saving machinery, said companies consisting of Transport Appliance Works, Ltd., New Conveyor Co., Ltd., Little & Graham, Ltd., and the Automatic Coal Gas Retort Syndicate, of London, Birmingham, and Glasgow. I was successively employed as draftman, estimating clerk, head of cost finding department, assistant work's manager and engineer, secretary, manager, and, finally managing director. These companies were engineers and contractors, and under my direction from 1901 to 1905 they designed, built and installed, and also redesigned and constructed labor and fuel-saving plants for gas works, steel mills, iron works, coal mines, docks, street railways, underground electric railways, coke ovens. Said plants, including gas plants, were guaranteed as to performance and manitenance for periods of from 3 months to 12 months, and the starting and operation was under my control.

My duties with the companies mentioned included supervision over as many as twenty-five draftmen, six bookkeepers, five cost accountants, two to three hundred men in the manufacturing plant, and at different times several hundred men were engaged on outside building work, the erection of steel buildings, the installation of equipment and the starting up of plants.

I have regularly read during the past twenty years, the principal technical engineering and gas magazines published in this country and abroad, as well as all books relating to gas manufacture and gas distribution.

[fol. 2755] My first research work in connection with water-gas operations consisted of studies made in 1902 to 1905 of water-gas plants according to the Lowe, Delwick Kramer and Aarts, and the Economical designs, principally with the object of producing a combination water gas and coal gas, to save oil but also for the production of blue water gas with a small percentage of carbon dioxide. Operating plants were made for the removal of inert gases from the blue water gas to conserve the heating qualities of the mixed gases. This study of auto carbureting and its application to gas production was also carried on by me in the United States beginning in 1911. Also at that time, tests were made by me and plans carried out under my direction which permitted of bituminous coal being used as generator fuel.

Studies were made in connection with law-grade gases. I designed and built in Great Britain dozens of gas producers of both the pressure and the suction type as a subcontractor, and was connected with the Power Gas Corporation, which contracted for a plant required by South Staffordshire Mond Gas Company to make and distribute to industrial users a low-quality of gas for power and heat production purposes. Prior to that I designed and built producers and equipment for Brunner Mond & Co.

As Assistant engineer to Maurice Graham, I redesigned the Coze patent inclined retorts for the production of coal gas, in Great Britain, France, Italy and Germany. I also made studies of coke oven designs in connection with the building of the steel structures used in connection with said ovens, and also built coal conveying plants, charging [fol. 2756] machines, ash-conveying plants, and coke-conveying, storing and reloading plants, for coke-ovens at Brymbo, Glengarnock, Cowdenheath, Wigan, St. Helens, etc. I designed and furnished a considerable part of the fire-brick work for the ovens built at Joliet, Woodward and St. Louis. I was also engaged as expert to the consulting engineer who was employed to report on the designs of the coke ovens built at Canal Dover during the war.

In connection with coal mining, I designed and built in Great Britain, from 1901 to 1905, pot-head apparatus and equipment, for the purpose of winning, mixing, cleaning and

washing coal to be used principally for the production of gas. In the United States, during 1912 to 1914, I was engaged as consulting engineer to a group of coal companies, operating over twenty coal mines in Middlesborough, Kentucky. This necessitated going into the mines, taking samples, inspecting the seams, and having charge of chemical analyses and gas tests on these coals, for the purpose of demonstrating their usefulness in the gas business,—the chemical work and testing being done at Detroit, under my direction, by Leigh E. Worthing, chief chemist of the Detroit City Gas Co. Other tests on these coals on a large scale were made at Station A of the Laclede Gas Light Co., St. Louis. I later opened a mine that I partly controlled in Western Kentucky for the purpose of securing gas coal for St. Louis, and over a thousand tons were tested in actual operations. I also acted as agent for the sale of other coals to gas companies in the United States.

[fol. 2757] In conjunction with T. J. Weber, director and consulting engineer of the United Light & Railway Co., I took out a patent for a complete gas making system, embodying the principal of mixed blue water gas and coal gas, which system is now in almost general use in Europe.

In connection with gas purification in the United States, from 1910 to 1915 I mined and prepared in Tennessee and in California, iron mass for use in gas plants, and also cooperated with Victor Dewey, general manager of the Detroit City Gas Co., and later with George B. Evans, of the Laclede Gas Light Co., St. Louis, in designing and patenting a system of liquid purification of gas, in which minerals carried in suspension in water were used for removing impurities from gas. This system is now sucessfully in use, with the one difference that, instead of using a combination of minerals in suspension in liquid, one mineral is used. In 1912 I designed and used a system that permitted gas companies to use a waste product for purifying gas. In 1913 I patented, and there is now in use in several states, a grid system for supporting iron mass in purifier boxes. Also, a system for revivifying fouled oxide. In 1914 I designed and gas companies used my system of treating gas to prevent deposits of napthalene.

In connection with gas distribution systems, studies were made of those in use at St. Louis, Chicago and other places

in Illinois, including Waukegan, which was the first to instal- and use successfully a high-pressure transmission and low-pressure distribution gas system in the Middle West. [fol. 2758] In 1918 I had to work for weeks on that system to restore gas pressure to the outlying towns. In 1908 I investigated the high pressure transmission system of the Public Service Company of N. C., and wrote a technical description of it for the Journal of Gas Lighting.

In the utilization of gas under both high and low pressure, studies were made of lighting and heating appliances, and I designed and built in 1915 appliances of this description, in which a mixture of gas and air was preheated before going to the burner tip.

In connection with the commercial department of gas companies, studies were made of the bookkeeping, billing, meter reading, jobbing, collecting, claims, credit and similar departments, particularly of The People's Gas Light & Coke Co., Chicago, and on my recommendation, radical changes were made in the method of doing business by that company. In this work I co-operated with Charles A. Munroe and other executives of the Gas Company in 1917 and 1919.

I am not a chartered or certified accountant, but as secretary of the New Conveyor Company I had charge of all of its books and I opened a new set of books for the Central States Gas Company.

I am a member of the American Gas Association, and have at times been a member of the Illinois Gas Association, Michigan Gas Association, Southern Gas Association, and of the Association of Mechanical Engineers, Birmingham, England. At the latter I read two papers,—the first in 1904.

[fol. 2759] My early experience in the manufacture of gas apparatus and equipment included the production of cast iron mains, retort iron work, bench mountings, exhausters, steam engines, pumps, governors, and the design and inspection in the manufacturer's works of firebrick work used in coal gas and water gas operations this work occupying from 1894 to 1906.

In connection with the redesign, construction, or reconstruction of gas works equipment, my first work was on a new plant at Huddersfield in 1897, and this was followed by work at Rochdale, West Hartlepool, Selford, Burslem,

Batley, Cambridge, Dudley, Leek, Hull, Smethwick, Leeds, Swansea, Middleton and Netlon, etc. Machinery and apparatus for gas works, exclusive of the firebrick work, was also designed and built under my supervision, at three different works in Birmingham, at Edinburgh, Glasgow, Burnley, Sheffield, Stratford, Portsea, Cradley Heath, Ipswich, Middlesborough, Cardiff, Neath, Newcastle, Milan, Melbourne, Bremen, Koenigsberg, Wellington, N. Z., London, Kilmarnock, Brighton, Tipton, Burton-on-Trent, Oxford, Belfast, Hanley, Leigh, Stoke, Neath, Jersey, Wolverhampton, Coventry.

In connection with boiler houses, equipment such as labor saving machinery, coal and ash storing and loading apparatus, and coal measureing and saving equipment, was designed and installed for: London County Council (Tramways), City and South London Railways (tubes), Central London Railway (tubes), British Westinghouse Electric Co. (Mersey Tubes), British Thompson Houston Company, Electric Construction Company, Birmingham Electric Power Station, Leeds Electric Tramway Station, Leeds [fol. 2760] Electric Light Station, Edinburgh Electric Light Station, Glasgow Electric Tramway Station, Wellington (N. Z.) Electric Power Station, Alex Cross & Sons, chemical plant, and many others. In 1906 I was consulting engineer to Compagnie L'Union des Gas, in the High Courts of Justice, England.

In 1907 I was consulted by the Link Belt Co., Philadelphia for the purpose of determining whether or not it would be profitable for that company to organize a manufacturing plant to produce gas apparatus and equipment and design complete gas plants. From February 1907 to October 1908 I was engineer and agent of the Missouri Firebrick Co., St. Louis, builders of the first coal gas benches which utilized bituminous coal for heating the retorts. For that company I designed and built the first modern coal gas plant in Montreal. From October 1908 to October 1910 I was chief of the Gas Division of the Evens and Howard Firebrick Co., St. Louis. For that company I designed and installed the first modern coal gas plant used in St. Louis, Mo.

General Manager, Consolidated Gas Purification and Chemical Company, and the Atlas Paint Company (miners of iron oxide), and at the same time consulting engineer

to Tennessee Mining & Manufacturing Co., and to Wm. H. Lindsey; and to British Association, Incorporated (Coal land owners), October 1910 to August 1914.

August 2, 1914, engaged as chief gas engineer of the Public Utilities Commission of the State of Illinois. From July 1, 1918 to February 1919, when on leave of absence [fol. 2761] from the Commission, I rebuilt the plant and partly reconstructed the distribution system of the Central States Gas Co. at Vincennes, Indiana; the coke ovens were rebuilt; a new coal gas plant was put in; new high-pressure transmission lines were laid through Illinois; and designs were prepared for water-gas plant. My principal reason for taking this leave of absence during the war, was to experiment with the compression of gases for the recovery of crude light oils to be used in the manufacture of explosives. In connection with this work I was appointed a member of a committee, formed at my request by President Wilson, on Toluol and Gas Standards, Bureau of Standards, Washington, in the year 1917. Before my work at Vincennes was finished, I was recalled by the Illinois Commission.

My agreement with the State of Illinois permitted me to engage in outside consulting work. In that connection I acted for the City of Lexington, Kentucky, and in 1919 and 1920 I was engaged by the District Attorney of New York, and by the City of New York, in connection with the 80 cent Gas statute, on the Consolidated Gas Co. case. The Kings County Lighting Co. case, as well as on The Bronx Gas & Electric Co., the New York & Richmond Gas Co., the Brooklyn Union Gas Co., and other gas rate cases. While with the Illinois Commission I had charge of the investigation of all gas rates and service matters, and made appraisals, surveys, reports and investigations of operating conditions in connection with every municipality in the State of Illinois. At times it was necessary for me, as the representative of the Commission to direct and control the operation of Illinois gas plants and redesign the distribution system. [fol. 2762] While with the Illinois Public Utilities Commission I was also retained by the North Carolina Public Service Commission to make an investigation, appraisal and report on the gas property of the Columbia Railway and Utilities Co., and was also engaged by the City of Anderson, S. C., to investigate the gas rates and act as referee to

recommend reasonable rates, the tentative schedule being submitted for the approval of the South Carolina Commission.

In 1918 I was appointed by the Illinois Commission special investigator of the Peoples Gas Light & Coke Co., having previously investigated the rates on two occasions. I then made an audit of the books, having at one time over seventy accountants, computers and inspectors as assistants at work on the case. From 1916 to 1919 I had charge of the appraisal work for the Illinois Commission in connection with the rates of The Peoples Gas Light & Coke Co., Chicago, and at the request of the City of Chicago and the gas Company, I was, with the permission of the Commission, allowed in 1919, to act as chairman of a conference of attorneys and engineers, which made appraisals of property of the company on five different bases.

In case 7689 I drafted the final order in the Matter of The Peoples Gas Light & Coke Co., for the approval of the Commission. Since leaving the Commission I have had charge of all gas and electric light investigations for the City of New York, including all of the cases in the Federal Court and the hearings before the Public Service Commission of the State of New York. Under my contract with [fol. 2763] the City of New York, I have done work for other States and municipalities. I was engaged in 1922 by the Board of Public Utility Commissioners of New Jersey to appraise the property and make a report on the operating expense of the Atlantic City Gas Co. For the municipalities of Jersey City and Newark I was engaged in 1920 as engineer in connection with the rates of the Public Service Gas Co. of New Jersey. Since 1920 I have had charge of the engineering work in connection with the gas rate cases at Petersburg, Virginia, Newport, Rhode Island, and Rutland, Vermont. In 1921 and 1922 I investigated the annual reports of all electric companies in the City of New York and submitted reports thereon to the City authorities.

I have visited the plants of the plaintiff company and am familiar with the processes used for making gas at the various plants of the plaintiff. I have visited the Astoria plant four or five times recently. I examined "D" House first, that being new to me; then A House and B House and C House. I inspected the Coal-gas houses, designated as A and B.

House A is of good design and is operating efficiently, and it is more efficient than plant B. With some minor exceptions plant B, the horizontal retort house, is of good design. The Astoria Company made on Plant B in 1923 more gas than it did on plant A in the same period 1923. I examined the records of the Astoria Light, Heat & Power Company for 1922 and 1923.

(The volume containing the monthly book form reports of the Astoria Light, Heat and Power Company for the year 1922 considered as marked Defendants' Exhibit No. 93; Similar volume for the year 1924 considered as marked Defendants' Exhibit No. 94.)

The cost per M feet to make gas on plant A in 1923, as shown by the books and records in evidence, was 46.9 cents per thousand cubic feet made. The cost on plant B to make gas in the same period was 54.7 cents. In 1922 of the two [fol. 2764] plants A showed the lower cost per M feet of gas made. I examined or had accountants working under my direction examine the monthly reports of the Astoria Light, Heat & Power Company also the monthly reports of all Companies sending gas to the general transfer system for the years 1922 and 1923.

The accountants prepared under my direction transcripts of the monthly reports of the said companies by months showing the production cost as reported. I made transcripts of the monthly reports of the said companies by months showing the production cost as reported. I made a study and analysis of the gas account of the plaintiff showing the gas made by it used and unaccounted for over a period of years; for 1922 and 1923 from the books—form reports, and for the years previous to that from reports of the plaintiff to the Public Service Commission, back to the year 1909.

I similarly made an analysis of consumer data showing the number of active meters of the plaintiff for various years, obtained for 1923 and 1922 from the book form reports, and the other years from the Public Service Commission reports of the plaintiff. I made an analysis of gas consumption data as it relates to the plaintiff showing the consumption per consumer in the various years 1909 to 1923, inclusive.

I am familiar with the prices that the plaintiff is paying and has agreed to pay for certain quantities of bituminous gas coal; the contracts are arranged by the Consolidated Gas Company for the Astoria Company and other companies on the system. I know the prices plaintiff is paying and has agreed to pay for anthracite coal.

[fol. 2765] I familiarized myself with the contracts in evidence made by plaintiff for gas oil. I familiarized myself with the prices that plaintiff is paying and has agreed to pay for other materials used in the production of gas. I am familiar with the prices that other companies in this district have agreed to pay for material used by them in the production of gas.

The schedule entitled "Estimate of Reasonable Operating Cost for Ensuing Twelve Months, Consolidatel Gas Company of New York," was prepared by me. Sheet 1 shows an estimate of the quality of gas that I calculated would be made by or for the plaintiff and sets forth the basis for my calculations. Sheet 2 shows the quality of gas made by companies on the transfer system by months and by plants for the year 1923. Sheet 3 is an endeavor by me to weight the figures on Sheet 2 as they refer to the Astoria Plants, being, I think, a more correct showing of the actual quality of gas delivered by the Astoria Company to the transfer system. Sheet 4 shows the figures relating to the amount of gas made, bought, sold, used and reported unaccounted for for various years, 1909 to 1923, both inclusive. Sheet 5 shows principally the gas sales by years of the plaintiff with the increase or decrease and the percentage increase or decrease for a period of fourteen years and a calculation of the per cent increase averaged over the fourteen years. Sheet 6 sets forth, as taken from the records, the number of the consumers or active meters, the increase or decrease by years, and the per cent increase or decrease by years.

[fol. 2766] On Sheet 6, I might say that at the bottom of the page are calculations made by me based upon the figures in this schedule showing the consumption per active meter of the plaintiff in the various years 1909 to 1923.

Sheet 7, shows how I have applied the data on preceding sheets. It shows what would be the figure for the sales on the various theories and my final calculation as to the prob-

able sales for the ensuing twelve months mentioned in this table. And Sheet 8 shows how I finally applied all of the figures that I have set forth in the preceding sheets to arrive at the total gas that I estimate will be made for the plaintiff's consumers and for its own use.

I personally prepared Sheets 1 to 8 inclusive just described. I similarly prepared the tables appearing on Sheets 9, 9-A and 10 of this schedule. They show beginning with 9, the cost in 1923 as reported by the Astoria Light, Heat & Power Comapny for Plant A and Plant B, and also for the year 1922, and then there is set up alongside of that my estimate of the cost to produce gas at Plant A and Plant B, respectively, in the period that I have taken into consideration—the twelve months' period. The other sheets set forth similar data in relation to Plants C and D of the Astoria Company.

Sheet 11 shows the amount of water-gas made and the amount of coal-gas made, respectively, at the various plants which make gas for the system, to enable me to arrive at the percentage of water-gas that was delivered to the system and also the percentage of coal gas. It also shows the [fol. 2767] gas made at Astoria on each of the four plants, and I arrived at the percentage of the gas made at each of the plants. Further than that, the exhibit speaks for itself. On Sheets 12, 13 and 14 I have, under different theories as to the quantities that would be made of each kind of gas on certain of the plants, set forth my estimate of the cost of producing gas. I have endeavored to set forth on the said sheets everything that I took into account in arriving at the compated costs of the estimated reasonable cost of producing gas at the Astoria Plant, and tried to make the sheets self explanatory.

On Sheet 9 the estimate of cost of coke and coal on Plant A differs from the cost of coal used on Plant A in 1923, caused solely by the lower contract price of the coal that the plaintiff has made as compared with the previous year. I have slightly increased the amount, making it 200 pounds per M feet of gas made. The company used at Plant A in 1923 198.17 pounds per M cubic feet of gas made. As appear on its record, $7.4722946 was the average price per gross ton of bituminous coal paid by the company in 1923. Plant B in 1923 used 197.751 pounds per thousand. For

the purpose of my estimate I assumed exactly the same as on Plant A, that is 200 pounds per M cubic feet. These 200 pounds per M cubic feet indicate good carbonizing results taking into account the quality.

In Item 2, the cost of handling coal I made no change as compared with the company's records for the year 1923. The cost of handling the coal on Plant B is higher than on Plant A due to Plant A being built to handle coal mechanically at a slight less cost than on Plant B and due also to the [fol. 2768] fact, I believe, that Plant A gets its coal all from one source whereas Plant B has to use what is left, making a combination of different kinds of coal. In other words, the inclined house requires the use of coal that is uniform whereas the Plant B can use coals that vary in size and quality.

In reference to the residuals recovered, I have shown the same recovery, expressed in amounts per M cubic feet of gas made, in my estimate, as appears on the company's records for 1923, with the exception that I have slightly increased the credit for coke on the Plant B house. Inasmuch as I had the same quantity of coal on Plant B as Plant A, I used more coal, slightly, than was used in 1923 on the B house. It seemed to follow in my judgment that the quantity of coke would be similarly increased. Plant A and Plant B would recover the same amount of coke in percentage of the coal carbonized. I did not in any way change the unit price for the coke which is credited against the coal used, because that is more or less of a book transaction. If the credit to coal gas is increased, the charge to water gas for generator fuel in the form of coke would have to be increased. If there was a reduction in the selling price of coke these figures necessarily would be changed. It would change the coal gas cost to about the same extent, and the water-gas cost the other way around. You have to deduct the net credit for residuals, and not the gross credit. I deducted what is shown to be the residual cost at Plant A. I finally get the net cost for the coal used in making the gas per M cubic feet of gas made, 1.18 per thousand feet in the A house.

[fol. 2769] Under my estimate here the company paid, on Plant A, $41,790 net—for the coal alone, without the handling charge, and gross, $1,928,700. It would recover from

the residuals, $1,990,405. The net cost of the coal carbonized, would be $41,790 on Plant A. I have shown that Plant B makes more gas than Plant A. I do not think it could or would make the amount of gas shown in my estimate. I have assumed a plant of a size sufficient to make at Astoria all of the gas needed by the Consolidated Gas Company and the spread of the gas to be made on the various plants is in exact proportion to the quantities made on said plants in the year 1923. I have taken the complete sales as being estimated to be made at a plant similar in every way to Astoria and operated in every way similar to the Astoria plant. I do not claim, of course, that the plant does now actually make or that it can make those quantities.

I assumed Plant B would make more gas than Plant A for the reason that it did in 1923 and I adopted the same percentage of total made and applied it to each plant at Astoria. And that is set forth on Sheet 11 of this schedule. In this estimate appearing on Page 14 of this schedule I assumed that the Astoria Light, Heat & Power Company operated these four plants to the best advantage. I do not intend to say that Plant A or Plant B made the amount of gas set forth on page 9. In other words, my estimate on Sheet 14 is based on the Astoria works operating as they did in 1923, but on a larger scale.

On my theory, the cost in the holder would not be changed if more or less gas were made on Plant- A and B than shown in my estimates, unless you got down to a very small mark which I do not contemplate would be attempted. I assumed the company operated the plants to the best advantage, it being its best plant.

I made out a computation, taking into account not only [fol. 2770] the gas made at Astoria, that is the percentage of coal-gas and water-gas as made at Astoria in 1923, but I took into account in my other computations the percentage of coal gas and water-gas that was delivered to the transfer system. That is to say, I assumed that the same qualities of gas would be made as were delivered to the system in 1923. I have fully set forth my reasons for making these computations on Sheets 11, 12 and 13, respectively.

Turning now to page 9-A of this Schedule, I used a greater cost per M for repairs to works and station struc-

tures on Plant A in my estimate than is shown on the company's books for the year 1923, for the reason that repairs vary in amount and in cost from year to year, and I therefore used a two-year average—1923 and 1922. I did not take a longer period than two years, as I believed I was limited to an examination of the books, so far as they related to operating expenses, to the years 1922 and 1923. In my judgment the reasonable cost to produce coal gas at the present time on Plant A of a quality similar to that made on Plant A during the year 1923, taking the plant just as it is and assuming that the company was paying a reasonable cost for labor and materials used in the production of gas, the cost to put gas in the holder, in April, 1924, at Plant A would be 34.35 cents per thousand feet. That compared with the cost for 1923 on Plant A is over 12 cents a thousand feet less, due to the change in the price of the coking and coal. That is the only change made. The figure representing the cost in 1923, is 46.97 cents per [fol. 2771] thousand at Plant A. The cost should be lower in 1924 than in 1923, principally because of the reduction in the cost of the coal. Upon the assumption I have stated with regard to Plant A in my opinion the reasonable cost to produce coal gas on Plant B at the present time is 38.49 cents. In 1923 on Plant B it was 54.7 cents per thousand feet in the holder; that is, in the Astoria holder. The cost as expressed by me for both of these plants does not include the cost of making the gas that is lost in transmission and distribution.

On Sheet 10 of my schedule, for Item 21, total material on house C I have shown a larger cost per M than was reported for 1923. That is caused solely by the change in price the plaintiff has agreed to pay for oil. Other changes made on Sheet 10 of my estimate as compared with the actual cost reported in 1923 are merely a change in the repair accounts due to averaging the two-year period instead of taking up a single year, because I believed I was limited to a consideration of the years 1922 and 1923 operating costs. In my opinion 3.89 cents per M cubic feet is somewhat above the normal for the cost of repairs at the C plant.

Preliminary cross-examination by Mr. Ransom:

I obtained the figures shown on Sheet 2 from the monthly book records of each company for 1923; for the New Amsterdam Company, including the East River Company, the Central Union Gas Company, the Standard Gas Light Company and the Astoria Company, I took the figures from [fol. 2772] monthly reports for 1923. As to the New Amsterdam Company the figures which show the B. t. u. content of gas at the holder inlet were just as reported, and I could not tell you offhand whether it was at the inlet or outlet; I could by referring to my proof sheets. I took the figures on Sheet 2 from the monthly report of each of those companies, just as they reported.

On Sheet 4, for the years 1922 and 1923 I obtained my figures from the books or the book form reports of the Consolidated Gas Company and my figures in that respect correspond to the figures in evidence in those reports. As to the years 1921, 1920, 1919 and 1918 and therefore, I took those from the reports of the Consolidated Gas Company to the Public Service Commission. I obtained copies from the Commission for my use and sent over and checked them against the originals.

On Sheet 5, the situation is similar, as to our figures with respect to the gas sales—that is, I took the 1922 and 1923 figures from books and exhibits in evidence and the figures prior to that from the reports to the Public Service Commission.

I took the figures on Sheet 4 prior to 1922 from the Public Service Commission reports except as shown by the foot-notes there were some reconciliations, however, and I found these reconciliations in the reports in the subsequent years.

On Sheet 6, with respect to the years 1922 and 1923 I used the records and exhibits in evidence. I got the figures prior to 1922 from the same source as I did the other fig- [fol. 2773] ures, from the reports to the Public Service Commission. I believe these figures as to the number of active meters are those which I found in the Public Service Commission reports.

On Sheet 7 I arived at the five-year average sales per consumer by using the figures I had in the preceding pages

of the table and made the calculation. It is purely an arithmetical average.

On Sheet 11 the figures there given with respect to the output of the Standard Company, the New Amsterdam Company and the Central Union were gotten from the monthly reports of those companies. They were obtained under my direction. I found them to be correct.

(The reports of the Consolidated Gas Company and the Astoria Light, Heat and Power Company to the Public Service Commission, for the years 1918, 1919, 1920, and 1921, were received in evidence and given the same Exhibit numbers as they bore as Exhibits for identification.)

Redirect examination by Mr. Donnelly:

Referring to every month since January 1, 1922, the production costs at Astoria for water gas are lower than those in all of the Manhattan plants of the Consolidated in making water gas. I showed counsel a chart prepared showing the variation of the cost. I secured the information upon which this chart was compiled, from the monthly book records of the respective companies.

By Mr. Ransom:

The upper line shows the gas storage costs of the Manhattan plants at the stations and at the distributing stations as reported by the company, and as to Astoria it merely shows the cost of storage at Astoria. This is water gas in the Astoria holder.

By the Master:

The upper line showing the higher cost is the Consolidated and the lower line, the dotted line, is the Astoria cost of all of the water gas plants operated by the company. The left-hand figures represent cents per thousand cubic feet made after January 1, 1922. Every month shows a point [fol. 2774] and the points are then connected to show the curve. Each month is here on the bottom line and the figures are set forth for 1922 and 1923, and up to April, 1924. Each of the vertical lines, having the month written on it, shows the point that the costs reached in said month. There is no allocation as to Astoria of storage holder costs.

(Mr. Little's Schedule was here received in evidence, marked Defendants' Exhibit No. 95, and spread upon the record as part of the testimony, as follows:)

Consolidated Gas Company of New York. Estimate of Reasonable Operating Cost for Ensuing Twelve Months. Before Special Master, Hon. James G. Graham.

Consolidated Gas Company of New York. Estimate of Reasonable Operating Cost for Ensuing 12 months based upon the Quality of Gas made in 1923.

I have estimated and hereinafter shown the quantity of gas to be made by or for the plaintiff, for sale to its consumers and for its own use. The nominal year selected is the twelve months ending April 30, 1925.

The calculations are based upon the plaintiff's books and records and on these of its manufacturing subsidiary, The Astoria Light, Heat & Power Company, to the extent herein shown. The various steps are set forth in detail, so that the parties interested can ascertain how the various figures and estimates of cost were finally reached. For the reasons later given, my final estimates are based upon the average qualities of gas made and reported from month to month, during 1923, by The Astoria Light, Heat & Power Company. They do not show, on their face, the cost to produce or to "furnish" gas of 650 B. T. U. quality; but it is my judgment that, by revision, they can be amended so as to closely indicate the cost to produce the statutory quality gas.

I am unable to suggest the extent of the increase in cost to produce gas that will furnish to all consumers a maximum of 650 B. T. U. per cubic foot, having had no direct ex-[fol. 2775] perience in manufacturing or seeing others deliberately make gas that would deliver to each and every consumer on a distribution system a gas of such quality. The cost of production would be speculative in the absence of data acquired by those skilled in the art of supplying artificial gas. If such a gas were furnished, the quantity that would be sold would be problematical.

The monthly average qualities of gas delivered to the General Transfer System by the plaintiff and its subsidiaries, respectively, are shown on the following table:

(Here follow side folio pages 2776, 2777, and 2778)

EXHIBIT TO TESTIMONY OF A.S.B.LITTLE

SHEET 2.

RECAPITULATION OF WORKS' B. T. U. TEST FOR THE 12 MONTHS OF 1923.

FOR ALL PLANTS ON THE GENERAL TRANSFER SYSTEM.

MONTHLY AVERAGES OF DAILY AVERAGES. Period.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	12 mo.
Consolidated Gas Co. of N. Y.													
11th St. Station (Water Gas)	609	610	608	602	597	589	591	592	593	593	593	594	600
21st St. " "	604	601	604	606	592	588	586	589	589	595	593	591	596
99th St. " "	600	595	602	602	592	584	586	594	604	604	589	585	595
11th, 21st & 99th St. Sta. "		604	605	604	594	588	588	591	592	595	593	591	597
Total all Stations (Mixed Gas)		604	605	604	594	588	588	591	592	595	593	591	597
New Amsterdam Gas Co. (Incl. East River Gas Co. of L. I.) (Water Gas)	608	610	609	602	590	580	580	588	592	592	586	590	
Central Union Gas Co. (Coal Gas)	610	599	610	614	601	602	593	584	581	583	596	588	597
(Water Gas)	602	621	617	603	588	583	586	589	586	585	590	586	596
Mixed Gas (Observed)	606	600	604	580	588	581	596	582	587	582	578	590	590
The Standard Gas Light Co. (Water Gas)	619	615	608	609	600	595	596	610	602	595	595	597	603
The Astoria Light, Heat & Power Co.													
Plant A, (Coal Gas)	578	578	574	577	584	581	589	592	582	589	581	575	582
Plant B, "	565	561	566	574	571	568	573	582	583	584	582	582	574
Plant A & B, "	572	570	570	575	577	573	579	586	583	586	581	578	578
Plant C, (Water Gas)	599	604	614	606	590	592	597	587	593	596	593	589	597
Plant D, "	596	598	613	611	595	589	595	583	585	588	588	578	585
Plant C & D "	597	601	613	609	592	590	596	585	589	592	590	584	595
All Plants (Mixed Gas)	589	592	600	601	588	584	590	589	586	582	586	586	589

92426

Sheet 3

As heretofore stated, my final results are predicated upon the quality of gas made at the Astoria plants.

In the foregoing figures, a straight average heating value of the gas at each plant is given, and this does not show a reliable figure, as the quantities of each quality made in the various months differ materially. This feature is given weight in the next following table, which shows an average of 590.24 at the Astoria plants in 1923.

THE ASTORIA LIGHT, HEAT AND POWER COMPANY.

Calculations showing method of arriving at weighted average British Thermal Heat Units per cubic foot—1923.

1923	January	February	March	April	May	June	July
Plant "A"	188,503,718	166,048,418	179,710,790	100,878,064	105,167,888	84,416,976	72,772,717
Plant "B"	181,390,425	158,955,984	169,017,788	117,164,880	123,985,227	122,287,560	124,479,093
Plant "C"	388,543,746	372,355,732	394,770,072	355,672,914	290,387,970	177,117,520	161,280,147
Plant "D"	464,339,428	445,691,194	454,491,073	399,861,673	283,393,740	194,292,252	185,364,515
Total M Heat Units	1,222,777,317	1,143,051,328	1,197,989,723	973,580,531	802,934,825	578,114,308	543,896,472
Total Gas Made M ft.	2,074,923	1,932,411	1,996,072	1,620,314	1,365,694	989,644	922,482
Average Heat Units per Ft.	589.31	591.52	600.17	600.86	587.93	584.16	589.60

1923	August	September	October	November	December	Total
Plant "A"	74,323,824	71,612,772	104,542,199	156,416,239	177,150,025	1,481,543,630
Plant "B"	112,888,212	108,976,109	115,279,848	127,525,512	142,881,000	1,604,831,638
Plant "C"	177,812,279	216,889,750	276,058,260	333,806,816	397,577,945	3,542,273,151
Plant "D"	177,007,545	224,592,615	274,261,428	387,387,924	387,720,666	3,878,407,053
Total Heat Units	542,031,860	622,071,246	770,141,735	1,005,136,491	1,105,329,636	10,507,055,472
Total Gas Made M ft.	926,045	1,059,638	1,304,504	1,710,070	1,899,389	17,801,186
Average Heat Units per Ft.	485.31	587.06	590.37	587.78	581.94	590.24

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Sheet 4.

Statistics have been collected showing the make and disposition of gas during a period sufficiently prolonged to iron out any abnormalities in particular years. The figures given below have been taken into account in the manner subsequently shown in arriving at the estimate of gas to be made, sold and used by plaintiff in the nominal year under review.

CONSOLIDATED GAS COMPANY

Gas Made, Bought, Sold, Used, and Unaccounted-for.

M. cubic feet.

	1909	1910	1911	1912	1913	1914	1915
Gas on hand beginning of year,	23,279	25,455	26,999	35,409	28,477	29,091	30,585
Gas made,	10,086,579	10,348,051	10,541,960	10,189,901	6,915,624	6,533,474	5,984,029
Gas bought,	6,004,083	6,312,897.2	6,326,775.27	7,870,971.2	10,958,955.4	11,611,910	B 10,949,614.8
Total available,	16,113,941	16,686,403.2	16,895,734.27	18,096,281.2	17,903,056.4	18,174,475	16,964,219.8
Gas sold other companies,	52,239	33,439.5	188,171.1	A 731,214.4	770,181.6	866,961	677,234.7
Gas sold to consumers,	15,246,596	16,010,833.2	16,145,516.4	16,621,200.6	16,553,735.7	16,508,901	15,679,825.3
Gas used,	63,824	74,425.2	76,431.3	77,551.5	68,951.1	67,381	73,299.2
On hand end of year	25,455	26,999	35,409	28,477	29,091	30,585	29,624
Total accounted for,	15,388,116	16,145,696.9	16,445,527.8	17,458,443.5	17,421,959.4	17,473,828	16,459,983.2
Unaccounted-for,	725,825	*540,706.3	450,206.47	637,837.7	481,097	700,647	504,236.6
% Unaccounted for,	4.50	3.24	2.66	3.52	2.69	3.86	2.97

	1916	1917	1918	1919	1920	1921	1922	1923
Gas on hand beginning of year,	C 35,793	38,450	28,545	39,628	42,132	39,733	E 47,536	52,666
Gas made,	7,163,183	7,322,846	D 7,987,405	7,221,664	8,544,693	6,780,499.3	8,204,826	9,804,127
Gas bought,	10,289,661.5	11,150,798.5	11,567,651.2	12,705,973.6	13,634,900.2	13,724,267.2	13,803,569.7	15,419,848.5
Total available	17,488,637.5	18,512,094.5	19,583,601.2	19,967,265.6	22,221,725.2	20,544,499.5	22,055,931.7	25,276,641.5
Gas sold other Co.'s	288,046.5	139,103.2	267,201.3	.....	54,183.5	.....	.....	.....
Gas sold to consumers	16,295,126.6	16,891,064.1	18,029,245	18,576,440.3	20,753,111.6	19,396,697.1	20,580,285.6	24,057,694.2
Gas used	69,464.7	76,250.1	67,427.8	65,133.8	63,135.7	59,233.9	52,138.9	75,447.6
On hand end of year	38,450	28,545	39,628	42,132	39,733	39,904	52,666	57,286
Total accounted for	16,691,087.8	17,134,962.4	18,403,502.1	18,683,706.1	20,910,163.8	19,495,805	20,695,090.5	24,190,427.8
Unaccounted-for	797,549.7	1,377,132.1	1,180,099.1	1,283,559.5	1,311,561.4	1,048,694.5	1,360,841.2	1,086,213.7
% Unaccounted for,	4.56	7.44	6.03	6.43	5.90	5.10	6.17	4.30

(*) Indicated, not actual, in 1910.

(A) Table No. 12 reconciled with page 451, year 1912.

(B) Table No. 12 reconciled with page 503, year 1915.

(C) Company corrected previous report in 1916 report.

(D) Table No. 12 reconciled with page 793, year 1918.

(E) Includes gas at 11th Street on 8-31-22—7,632 M cu. ft.

[fol. 2779] Sheet 5

The figures on the preceding table show that in 1923 the Consolidated Gas Company made in its own plants less than 39 per cent of the gas produced for its own use and for sale to its general consumers. Of the 61% purchased (15,419,848,500 ft.) 15,017,903,700 feet was provided by the Astoria Light, Heat and Power Company, the balance being credited to the Standard Gas Light Company and the New Amsterdam Gas Company. Nearly 60% of the gas needed for sale and use was produced at Astoria.

Before the estimated operating expenses can be ascertained, it is necessary to form a judgment as to the amount of gas that will be sold and used by the plaintiff.

In the year 1923, the sales increased over those of 1922 by 3,477,408,600 cubic feet, or about 17%. A similar increase in the next 12 months would result in the sales by the plaintiff reaching close to 28,148,000,000 cubic feet.

It is hardly possible that this phenomenal percentage of annual increase will be duplicated in the following year. I therefore believe due consideration should be given to figures dealing with a longer period and relating to (a) sales of gas, (b) increase or decrease in succeeding years, (c) per cent of increase or decrease, (d) number of consumers in each year, (e) increase or decrease of consumers in succeeding years, and (f) per cent of increase or decrease. See following tables:

Gas Sales

Year	M cu. ft.	Inc. or (d) decrease, M cubic feet	Inc. or (d) decrease, per cent
1909	15,246,598.0		
1910	16,010,833.2	764,235.2	5.0125
1911	16,145,516.4	134,683.2	.8412
1912	16,621,200.6	475,684.2	2.9462
1913	16,553,735.7	(d) 67,464.9	(d) .4059
1914	16,508,901.0	(d) 44,834.7	(d) .2708
1915	15,679,825.3	(d) 829,075.7	(d) 5.0220
1916	16,295,126.6	615,301.3	3.9242
1917	16,891,064.1	595,937.5	3.6572
1918	18,029,245.0	1,138,180.9	6.7384

Year	M cu. ft.	Inc. or (d) decrease, M cubic feet	Inc. or (d) decrease, per cent
1919	18,576,440.3	547,195.3	3.0350
1920	20,753,111.6	2,176,671.3	11.7174
1921	19,396,607.1	(d) 1,356,504.5	(d) 6.5364
1922	20,580,285.6	1,183,678.5	6.1025
1923	24,057,694.2	3,477,408.6	16.8968
1909 to 1923		8,811,096.2	57.7906%
Average yearly increase in 14 years,			4.1279%

Note—In 1922, the Consolidated Gas Company took over the business of the New York Mutual Gas Light Company, and the above figures reflect the increase in sales during 1922 and 1923.

The next table gives Consumer Data:

[fol. 2780] Sheet 6

Consumer Data (Active Meters)

Year	Number	Increase or (d) decrease (number)	Increase or (d) decrease (per cent)
1909	446,306	..	
1910	469,571	23,265	5.213
1911	476,931	7,360	1.567
1912	483,727	6,796	1.425
1913	486,579	2,852	.590
1914	486,958	379	.078
1915	489,147	2,189	.450
1916	497,352	8,205	1.677
1917	502,445	5,093	1.024
1918	500,996	(d) 1,449	(d) .288
1919	504,764	3,768	.752
1920	517,087	12,323	2.441
1921	514,706	(d) 2,381	(d) .460
1922	555,971	41,265	8.017
1923	560,189	4,218	.759

Note—Includes meters taken over in 1922 from N. Y. Mutual Gas Light Co. To get the average per cent increase, I have excluded the years 1922 and 1923, as the

figures for those two years include the wholesale increase in active meters taken over from the Mutual Company. The average per cent increase in 12 years to 1922 was 1,277.

After getting the foregoing figures it was necessary to make a further investigation of the sales of gas, to ascertain how the consumption varied per active meter in the various years under consideration. This information is set forth in the next table.

[fol. 2781] Consumption Data, Cubic Feet

Year	Consumption per active meter
1909	34,162
1910	34,097
1911	33,853
1912	34,361
1913	34,021
1914	35,902
1915	32,055
1916	32,764
1917	33,618
1918	35,987
1919	36,802
1920	40,135
1921	37,680
1922	37,017
1923	42,946
Average per consumer	35,560

feet over period of 15 years.

With the foregoing information before me, I have given weight and consideration to it in the following manner:

[fol. 2782] Sheet 7

The number of consumers for nominal 12 months period used in my calculation was arrived at as follows:

Consumers in 1923	560,189
Average increase % in 12 years	1.277%
Consumers in 1924-1925 (101.277% of 560,189)	567,343

On various bases, using foregoing figures, the sale of gas in the nominal 12 months would be as follows:

1923 basis of sales per consumer X 567,343 consumers = 24,365,112 M cu. ft.

15 year average sales per consumer X 567,343 consumers = 20,174,717 M cu. ft.

5 year average sales per consumer X 567,343 consumers = 22,079,288 M cu. ft.

The sales of gas in 1924, by months, as compared with 1923, were ascertained as far as possible. To date, I have secured this information for January, February, March and April 1924, and on June 2, 1924, no other figures were available to me.

Month	M cu. ft.		Inc. or (d) decrease	
	1923	1924	Amount	Per cent
January	2,564,871.7	2,467,527.6	(d) 97,344.1	(d) 3.795
February	2,752,876.9	2,664,249.0	(d) 88,627.9	(d) 3.219
March	2,635,404.4	2,695,838.0	60,433.6	2.293
April	2,431,130.7	2,320,425.1	(d) 110,705.6	(d) 4.555
Totals and averages	10,384,283.7	10,148,039.7	(d) 236,244.0	(d) 2.275

There has been a falling off in sales 1924 as compared with 1923, during the 4 months for which I have figures. It cannot be concluded that this decrease will be apparent in the remaining 8 months. On the other hand, there might be an increase in May sales due to the cold weather. Based upon 1923 sales, with a falling off in the first 4 months of 1924, we might on the same ratio calculate the sales for the nominal year at 23,510,381.7 M cu. ft. To be on the conservative side I use for my estimate of sales the round figure of 23,500,000 M feet, which does not allow for any increase in consumers in 1924 and is based on a decrease in use per consumer as compared with 1923 records.

To arrive at the amount of gas to be made, we must add the amount likely to be used by the Company and a fair allowance for gas unaccounted-for.

[fol. 2783] Sheet 8

Amount of Gas to be Made

In arriving at the amount of gas likely to be used by the plaintiff and the Astoria works, I have adopted the following method:

	Ft.
Gas used at plaintiff's works and stations	13,867,500
Deduct amount used at work (estimated)	10,000,000
Gas assumed used at plaintiff's station	3,867,500
Gas used at offices and sales rooms	39,907,400
Gas used at shops, etc.	17,857,700
Miscellaneous gas used	3,815,000
Gas used at Astoria works and stations	11,618,900
Total estimated use of gas	77,066,500
Gas estimated to be sold	23,500,000,000
Total gas accounted for	23,577,066,500
Gas made but not accounted for (4.5%)	1,110,961,248
Total gas estimated to be made	24,688,027,748

Cost of Production

Having estimated the amount of gas to be made, sold and used, it becomes possible to consider the cost to the plaintiff of producing the gas in a suitable plant or plants such as it owns or controls.

I have taken as the base of my calculations the cost to manufacture coal-gas and water-gas at the Astoria plants as shown by that company's records, but have modified the figures reported for the year 1923 when making my estimates, so as to show the result of changed costs for the principal production materials which enter into the manufacture of coal-gas and water-gas, respectively.

In setting up my table of production expense, I have included therein the book costs both for 1922 and 1923 because they indicate how conditions change from year to year. The tables referred to are as follows:

For coal-gas plants "A" and "B," tables are on sheets 9 and 9a; for water-gas, they appear on sheet 10 of this proposed exhibit.

(Here follow side folio pages 2784, 2785, and 2786)

[fol. 2787] Sheet 11

In figuring the costs in various ways for making coal-gas and water-gas at the Astoria plants, I first ascertained the percentage of coal-gas and water-gas sent to the general Transfer system of mains by the various companies in the year 1923. It is not known from which plant a consumer on the System receives his gas.

The figures used in arriving at the percentage were taken from the records of the various companies, and are as follows:

Plant	Water gas, M cu. ft.	Coal gas, M cu. ft.
Standard	2,590,302	.....
New Amsterdam	5,593,831	.....
Astoria "A"	.....	2,553,650
" "B"	.....	2,799,702
" "C"	5,926,292	.....
" "D"	6,521,542	.....
Consolidated 14th St.	.....	.....
" 42d St.	.....	.....
" 11th St.	3,638,340	.....
" 21st St.	4,872,384	.....
" 99th St.	1,293,403	.....
Central Union	2,525,918	938,249
Total	32,962,012	6,291,601
Percentage	83 97	16 03

It was next necessary for me to ascertain the percentage of gas made at Astoria on each of the four plants. The figures used in computing the percentage appear in the following table:

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ESTIMATE OF FUTURE REASONABLE PRODUCTION COST

Sheet 9.

Section No. 1 of Table "A"—Coal Gas Costs—Astoria Light, Heat & Power Company.

Item		ESTIMATE Plant "A"-12 mos.		ESTIMATE Plant "B"-12 mos.		YEAR 1923 Plant "A"-1923		YEAR 1923 Plant "B"-1923		YEAR 1922 Plant "A"-1922		YEAR 1922 Plant "B"-1922	
	Gas to be Made and Gas Made M. cu. ft.	3,541,497.6		3,882,933.0		2,553,650		2,799,702		2,424,201		2,318,155	
		Amount	Cost per M.	Amount	Cost per M.	Amount	Cost per M.	Amount	Cost per M.	Amount	Cost per M.	Amount	Cost per M.
1.	Coking coal	1,928,700	.5446	2,114,645	.5446	1,687,676	.6609	1,838,322	.6566	1,696,818	.6999	1,635,780	.7056
2.	Handling	93,495	.0264	108,334	.0279	67,472	.0264	77,958	.0279	70,424	.0291	69,307	.0299
3.	Total Coal	2,022,195	.5710	2,222,979	.5725	1,755,148	.6873	1,916,280	.6845	1,767,242	.7290	1,705,087	.7355
4.	Residuals: Coke	1,733,917	.4896	1,901,085	.4896	1,250,352	.4896	1,357,223	.4848	1,181,942	.4876	1,129,002	.4870
5.	Coal Tar	186,991	.0528	178,615	.0460	134,726	.0528	128,793	.0460	133,596	.0551	105,356	.0455
6.	Ammoniacal Liquor	1,771	.0005	777	.0002	1,248	.0005	480	.0002	(1,488)	(.0006)	(623)	(.0003)
7.	Cyanogen	82,517	.0233	83,483	.0215	59,530	.0233	60,104	.0215	64,174	.0265	60,359	.0261
8.	Ammonia	10,979	.0031	10,872	.0028	7,923	.0031	7,887	.0028	8,739	.0036	8,185	.0035
9.	Ammonia Sulphate	147,326	.0416	171,237	.0441	106,218	.0416	123,416	.0441	110,425	.0455	101,797	.0439
10.	Carbon	708	.0002	388	.0001	480	.0002	240	.0001	480	.0002	240	.0001
11.	Ammonium Concentrate	9,916	.0028	13,590	.0035	7,232	.0028	9,971	.0035	1,287	.0005	1,195	.0005
12.	Total Residual Credit	2,174,125	.6139	2,360,047	.6078	1,567,709	.6139	1,688,114	.6030	1,499,155	.6184	1,405,511	.6063
13.	Deduct: Residual Expense—Coke	78,621	.0222	111,829	.0288	56,641	.0222	80,720	.0288	60,502	.0250	74,916	.0323
14.	Other Residuals	115,099	.0325	131,243	.0338	83,126	.0325	94,536	.0338	81,754	.0337	76,408	.0330
15.	Total Deductions	193,720	.0547	243,072	.0626	139,767	.0547	175,256	.0626	142,256	.0587	151,324	.0653
16.	Net Credit from Residuals	1,980,405	.5592	2,116,975	.5452	1,427,942	.5592	1,512,858	.5404	1,356,899	.5597	1,254,187	.5410
17.	Net Cost of Coal Carbonized	41,790	.0118	106,004	.0273	327,206	.1281	403,422	.1441	410,343	.1693	450,900	.1945
18.	Bench Fuel—Coke	261,008	.0737	281,513	.0725	188,217	.0737	247,238	.0883	168,179	.0694	(B)-194,986	.0841
19.	Boiler Fuel—Coal	4,958	.0014	5,824	.0015	3,589	.0014	4,120	.0015	721	.0003	715	.0003
20.	Boiler Fuel—Purchased Coke	2,125	.0006	2,330	.0006	1,594	.0006	1,672	.0006	101	....	101	.0001
21.	Boiler Fuel—Coke	48,519	.0137	52,808	.0136	35,000	.0137	38,134	.0136	39,813	.0164	37,575	.0162
22.	Boiler Fuel—Water Gas Tar	44,623	.0126	48,537	.0125	32,000	.0126	34,832	.0125	29,110	.0120	27,817	.0120
23.	Handling Boiler Coal (	.....	....	.....	....	134	....	156	....	20	....	20	....
24.	Handling Boiler Coke (	1,771	.0005	1,941	.0005	1,211	.0005	1,372	.0005	1,079	.0005	1,014	.0004
25.	Handling Boiler Purchased Coke (	.....	....	.....	....	19	....	20	....	.....	....	.....	....
26.	Total Coal Gas Fuel	363,004	.1025	392,953	.1012	261,767	.1025	327,544	.1170	239,023	.0986	262,228	.1131
27.	Gas Oil	20,187	.0057	22,133	.0057	15,111	.0059	30,204	.0108	(A)-165,423	.0682	(A)-175,036	.0755
28.	Iron Mass	21,249	.0060	23,297	.0060	15,232	.0060	16,763	.0060	14,681	.0061	14,045	.0061
29.	Water	15,228	.0043	18,250	.0047	10,910	.0043	13,129	.0047	10,816	.0045	10,970	.0047
30.	Sundry Supplies	4,958	.0014	8,154	.0021	3,629	.0014	6,045	.0021	3,026	.0012	4,887	.0021
31.	Handling Spent Material	3,187	.0009	4,660	.0012	1,510	.0006	3,359	.0012	.....	....	.....	....
32.	Total Material	469,603	.1326	575,451	.1482	635,365	.2488	800,466	.2859	843,312	.3479	918,066	.3960

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ESTIMATE OF FUTURE REASONABLE PRODUCTION COSTS

Section No. 1 of Table "A"—Coal Gas Costs—Astoria Light, Heat & Power Company

		ESTIMATE				YEAR 1923				YEAR 1922			
		Plant "A"-12 mos.		Plant "B"-12 mos.		Plant "A"-1923		Plant "B"-1923		Plant "A"-1922		Plant "B"-1922	
	Gas to be Made and Gas Made M. cu. ft.	3,541,497.6		3,882,223.0		2,553,650		2,799,702		2,424,201		2,318,155	
	Item	Amount	Per M. Cost	Amount	Per M. Cost	Amount	Cost per M.	Amount	Cost per M.	Amount	Cost per M.	Amount	Cost per M.
33.	Residuals: Water Gas Tar Sold)	3,188	.0009	3,495	.0009	2,224	.0009	4,669	.0017	23,252	.0096	27,566	.0119
34.	Drip Oil Sold)	....	....	....	....	85	....	187	....	874	.0004	826	.0003
35.	TOTAL RESIDUALS SOLD	3,188	.0009	3,495	.0009	2,309	.0009	4,856	.0017	24,126	.0100	28,392	.0122
36.	NET MATERIAL	466,415	.1317	571,956	.1473	633,056	.2479	795,610	.2842	819,186	.3379	889,674	.3838
37.	Gas Making Labor—												
	Superintendence	31,165	.0088	33,393	.0086	22,479	.0088	24,208	.0086	21,453	.0088	21,437	.0092
38.	Boiler House	13,104	.0037	15,143	.0039	9,589	.0037	11,040	.0039	12,300	.0051	12,051	.0052
39.	Retort House	239,405	.0676	234,529	.0604	172,576	.0676	169,013	.0604	154,177	.0636	144,850	.0625
40.	Purifier House	20,541	.0058	20,968	.0054	14,783	.0058	15,008	.0054	17,877	.0074	15,357	.0067
41.	Total Gas Making Labor	304,215	.0859	304,033	.0783	219,397	.0859	219,264	.0783	205,807	.0849	193,695	.0936
42.	Electric Power House Operating	48,164	.0136	84,649	.0218	34,696	.0136	61,139	.0218	39,484	.0163	41,572	.0179
43.	TOTAL MATERIAL & LABOR	818,794	.2312	960,638	.2474	887,149	.3474	1,076,013	.3843	1,064,477	.4391	1,124,941	.4853
44.	Repairs:												
45.	Works & Station Structures	41,790	.0118	29,510	.0076	25,504	.0100	18,073	.0065	32,935	.0136	20,343	.0088
46.	Furnaces, Boilers & Accessories	2,125	.0006	2,718	.0007	810	.0003	820	.0003	2,161	.0009	2,062	.0010
47.	Steam Engines	354	.0001	388	.0001	496	.0002	691	.0002	79	....	77	....
48.	Benches & Retorts	116,161	.0328	226,375	.0583	106,705	.0418	181,796	.0649	57,813	.0238	119,683	.0517
49.	Purification Apparatus	21,249	.0060	20,580	.0053	17,680	.0069	17,431	.0063	12,501	.0052	10,120	.0043
50.	Holders	2,833	.0008	3,495	.0009	1,683	.0007	2,531	.0009	1,914	.0008	1,907	.0009
51.	Miscellaneous Equipment	104,828	.0296	142,115	.0366	81,095	.0318	155,600	.0556	66,591	.0275	105,920	.0457
52.	Works Tools	11,333	.0032	5,436	.0014	8,168	.0032	4,082	.0014	7,546	.0031	3,585	.0015
53.	Total Repairs Labor	....	....	....	....	143,362	.0562	185,199	.0662	118,544	.0489	159,633	.0689
54.	Total Repairs Materials	....	....	....	....	98,779	.0387	196,825	.0699	62,996	.0260	104,244	.0450
55.	TOTAL REPAIRS	300,673	.0849	430,617	.1109	242,141	.0949	381,024	.1361	181,540	.0749	263,877	.1139
56.	Miscellaneous Works Expense	96,329	.0272	102,[illegible]	.0264	69,525	.0272	73,903	.0264	70,034	.0289	75,010	.0323
57.	Gas Storage—Manufacturing Station	708	.0002	777	.0002	513	.0002	601	.0002	508	.0002	476	.0002
58.	TOTAL COST OF GAS IN HOLDER	1,216,504	.3435	1,494,541	.3849	1,199,328	.4697	1,531,541	.5470	1,316,559	.5431	1,464,304	.6317

(A)—Includes Enriching Oil
(B)—Includes Tar.

Figures in Parenthesis Indicate Credits.

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Sheet No. 10

ESTIMATE OF FUTURE REASONABLE PRODUCTION COST

SECTION NO. 2 OF TABLE "A" WATER GAS COSTS—ASTORIA LIGHT, HEAT & POWER COMPANY.

		ESTIMATE				YEAR 1923				YEAR 1922			
	Gas to be Made and Gas Made	Plant "C"—12 mos. 8,219,138.1		Plant "D"—12 mos. 9,044,459.0		Plant "C"—1923 5,926,292.0		Plant "D"—1923 6,521,542.0		Plant "C"—1922 3,585,370.0		Plant "D"—1922 6,398,448.0	
Item.	(M. cu. ft.)	Amount	Cost per M.	Amount	Cost per M	Amount	Cost per M.	Amount	Cost per M.	Amount	Cost per M.	Amount	Cost per M.
1.	Coal in Generators	.....	.....	189,029	.0209	.....	.....	136,435	.0209	.....	.....	112,206	.0175
2.	Coke in Generators	1,070,954	.1303	946,955	.1047	772,401	.1303	683,035	.1047	432,612	.1272	666,784	.1042
3.	Purchased Coke in Generators	9,863	.0012	49,745	.0055	7,141	.0012	35,529	.0055	.....	.....	21,345	.0033
4.	Coal under Boilers	16,904	.0023	20,802	.0023	12,668	.0023	15,179	.0023	7,049	.0020	8,420	.0013
5.	Purchased Coke under Boilers	6,573	.0008	6,331	.0007	4,647	.0008	4,800	.0007	792	.0002	633	.0001
6.	Coke under Boilers	155,342	.0189	170,940	.0189	111,797	.0189	123,120	.0189	58,894	.0166	122,623	.0192
7.	Water Gas Tar under Boilers	145,479	.0177	160,087	.0177	105,075	.0177	115,589	.0177	75,226	.0211	114,017	.0178
8.	Handling Generator Coal	.....	.....	4,522	.0005	.....	.....	3,425	.0005	9	.....	3,171	.0005
9.	Handling Generator Coke	18,092	.0022	25,325	.0028	12,924	.0022	17,881	.0028	5,713	.0016	14,854	.0023
10.	Handling Boiler Coal	822	.0001	904	.0001	414	.0001	447	.0001	277	.0001	221	.0001
11.	Handling Boiler Purchased Coke)	4,109	.0005	6,331	.0007	60	.....	1,279	.0002	27	.....	24	.....
12.	Handling Boiler Coke)					2,756	.0005	3,070	.0005	2,113	.0006	4,338	.0007
13.	Handling Generator Purchased Coke)					47	.....	49	.....	.....	.....	373	.0001
14.	TOTAL WATER GAS FUEL	1,430,139	.1740	1,580,971	.1748	1,030,978	.1740	1,139,852	.1748	602,912	.1695	1,069,109	.1671
15.	Gas Oil	1,656,978	.2016	1,818,841	.2011	1,235,441	.2085	1,356,399	.2080	865,586	.2435	1,512,546	.2364
16.	Iron Mass	19,726	.0024	21,707	.0024	14,149	.0024	15,578	.0024	8,632	.0024	15,505	.0024
17.	Shavings	822	.0001	904	.0001	657	.0001	725	.0001	627	.0002	1,085	.0002
18.	Water	14,794	.0018	17,185	.0019	10,677	.0018	12,276	.0019	7,414	.0021	13,475	.0021
19.	Sundry Supplies	8,219	.0010	8,140	.0009	6,045	.0010	6,045	.0009	3,585	.0010	5,114	.0008
20.	Handling Spent Material	4,932	.0006	4,522	.0005	3,612	.0006	3,275	.0005	.....	.....	.....	.....
21.	TOTAL MATERIAL	2,135,601	.2815	2,452,270	.2817	2,301,559	.2884	2,534,120	.2886	1,488,596	.4187	2,616,834	.4090
22.	Residuals—Water Gas Tar Used	189,040	.0230	214,354	.0237	136,087	.0230	154,491	.0237	89,197	.0251	160,272	.0251
23.	Water Gas Tar Sold	102,739	.0125	115,769	.0128	73,869	.0125	83,522	.0128	57,569	.0162	73,061	.0114
24.	Water Gas Tar Variation on Hand	(1,644)	(.0002)	(14,471)	(.0016)	(1,230)	(.0002)	(10,485)	(.0016)	(850)	(.0002)	6,980	.0011
25.	Drip Oil Sold	13,151	.0016	15,275	.0017	9,637	.0016	10,853	.0017	6,183	.0017	9,956	.0016
26.	Drip Oil Variation on Hand	822	.0001	.....	.....	561	.0001	462	.....	267	.0001	270	.....
27.	TOTAL RESIDUALS	304,108	.0370	331,027	.0366	218,894	.0370	238,833	.0366	152,366	.0429	250,508	.0392
28.	NET MATERIAL	2,831,493	.3443	3,121,243	.3451	2,082,665	.3514	2,295,287	.3520	1,336,230	.3758	2,366,326	.3698
29.	Gas Making Labor— Superintendence	32,055	.0039	32,560	.0036	23,003	.0039	23,719	.0036	15,197	.0043	26,216	.0041
30.	Boiler House	51,780	.0063	55,171	.0061	37,491	.0063	39,525	.0061	21,460	.0060	48,527	.0076
31.	Generator House	161,917	.0197	130,240	.0144	116,592	.0197	93,930	.0144	69,304	.0194	101,729	.0159
32.	Purifier House	4,110	.0005	8,140	.0009	3,089	.0005	6,167	.0009	3,284	.0010	4,310	.0007
33.	TOTAL GAS MAKING LABOR	249,862	.0304	226,111	.0250	180,125	.0304	163,341	.0250	109,305	.0307	180,782	.0283
34.	Electric Power House Operating	38,630	.0047	31,656	.0035	27,947	.0047	22,781	.0035	10,420	.0030	31,571	.0049
35.	TOTAL MATERIAL & LABOR	2,119,985	.2796	2,379,010	.2736	2,290,737	.2865	2,481,409	.2805	1,455,955	.4095	2,578,679	.4030
36.	REPAIRS:												
37.	Works and Station Structures	34,521	.0042	19,898	.0022	14,222	.0024	15,229	.0024	21,344	.0060	13,790	.0021
38.	Furnaces, Boilers & Accessories	35,342	.0043	28,942	.0032	21,997	.0037	17,982	.0028	17,434	.0049	21,787	.0035
39.	Steam Engines	12,329	.0015	4,522	.0005	5,385	.0009	4,271	.0006	7,561	.0021	3,251	.0005
40.	Water Gas Sets & Accessories	129,040	.0157	102,197	.0114	89,207	.0150	79,181	.0121	75,838	.0214	68,333	.0106
41.	Purification Apparatus	15,616	.0019	6,331	.0007	6,827	.0012	5,604	.0009	9,641	.0027	3,909	.0007
42.	Holders	9,041	.0011	6,331	.0007	4,903	.0008	4,987	.0010	5,171	.0014	2,977	.0004
43.	Miscellaneous Equipment	75,616	.0092	74,165	.0082	48,479	.0082	55,236	.0085	36,437	.0102	49,748	.0078
44.	Works Tools	8,219	.0010	7,236	.0008	5,222	.0009	5,580	.0008	2,673	.0011	5,935	.0009
45.	Total Repairs Labor	.....	.....	.....	.....	107,868	.0182	114,368	.0175	97,062	.0273	107,074	.0167
46.	Total Repairs Material	.....	.....	.....	.....	58,463	.0099	74,612	.0115	80,037	.0225	62,656	.0098
47.	TOTAL REPAIRS	319,724	.0389	250,532	.0277	166,334	.0281	189,960	.0290	177,099	.0498	169,730	.0265
48.	Miscellaneous Works Expense	88,767	.0108	90,441	.0100	62,900	.0106	65,239	.0100	37,293	.0105	64,527	.0101
49.	Gas Storage	1,644	.0002	1,809	.0002	1,182	.0002	1,303	.0002	616	.0002	1,334	.0002
50.	TOTAL COST OF GAS IN HOLDERS	2,530,120	.4296	2,721,795	.4115	2,522,352	.4256	2,736,945	.4197	1,671,963	.4700	2,814,970	.4398

2786

Plant	Amount made, M cu. ft.	% of gas made at Astoria in 1923
Plant "A"—coal gas	2,553,650	14.345
" "B" " "	2,799,702	15.728
" "C" Water "	5,926,292	33.292
" "D" " "	6,521,542	36.635
	17,801,186	100.000

It appears from the foregoing table that of the coal-gas made at Astoria 47.7% was made on Plant "A" and 52.30% was made on Plant "B".

It appearing that 16.03% of the total gas used on the System in the year 1923 consisted of coal gas, I next applied this percentage to the amount of gas that I estimated would have to be made in the nominal year beginning April 1, 1924. The amount of coal-gas thus ascertained to be made is 3,957,491.0 M cubic feet.

[fol. 2788] Sheet 12

Operating on the same ratio that was found convenient by the Astoria Company in 1923, 47.7% of 3,957,491 M cubic feet would be 1,887,723 M cubic feet, to be made on Plant "A", leaving 52.3%, or 2,069,768 M cubic feet, to be made on Plant "B".

I next ascertained the percentage of the water-gas made at Astoria that was produced on Plant "C", and arrived at 47.61%, leaving 52.39% to be made at "D" plant.

As before stated, 83.96% of the gas made in 1923 for the System consisted of water-gas, so I therefore applied the 83.97% to 24,688,027.7 M cubic feet—which is the amount of gas estimated to be made in the year beginning April 1, 1924—and thus arrived at the amount 20,730,536.7 M cubic feet.

On the same ratio of make as the Astoria Company found it convenient to use in producing water-gas at Astoria in 1923, 47.61% of the water-gas to be made would be produced on Plant "C", or, in other words, 9,869,808.5 M cubic feet. This would leave to be made on Plant "D" 52.39% of the water-gas, which would amount to 10,860,728.2 M cubic feet.

These figures may be checked by the following recapitulation table:

Recapitulation

Estimated amount of gas to be made at each of the Astoria plants.

	M cu. ft.	
Plant A, Inclined Retorts	1,887,723.0	Coal Gas
B, Horizontal Retorts	2,069,708.0	
C, Williamson House	9,869,808.5	Water Gas
D, Bartlett Hayward House	10,860,728.2	
Total Make of Gas	24,688,027.7	

Having ascertained the amount of gas that would be made at each of the Astoria plants in the nominal year, assuming the same percentage of coal-gas and water-gas that was made in 1923 for the System and applying thereto the percentages of gas made at each of the plants at Astoria in 1923, I was able to prepare a table showing the cost of making gas at each of said plants, using for the individual costs the estimate of the necessary and reasonable expenditure for the nominal year as they appear on sheets 9a and 10 of this proposed exhibit. The figures referred to are as follows:

Estimated Cost of Producing Gas at Astoria

Estimate No. 1

	M cu. ft.	Amount	Per M feet
Plant A	1,887,732 0	$648,433	.3435
B	2,069,768 0	796,654	.3849
C	9,869,808 5	4,239,083	.4295
D	10,860,728 2	4,469,190	.4115
Totals & Averages	24,688,027 7	$10,153,316	.4113

[fol. 2789] Sheet 13

In case it might be decided that Plant "B" is not efficient in operation, the figures and percentages I have heretofore given could be used by assuming that Plant "A" would make all of the coal-gas and plants "C" and "D" would operate as heretofore stated. For that reason, I have set up another table of costs, as follows:

Estimated Cost of Producting Gas at Astoria

Estimate No. 2

	M cu. ft.	Amount	Per M feet
Plant A	3,957,491 0	$1,359,398	3435
C	9,869,808 5	4,239,083	4295
D	10,860,728 2	4,469,190	4115
Totals & Average	24,688,027 7	$10,067,671	4078

It might further be decided that Plant "C" is not as efficient as Plant "D", and therefore, I have set up another estimate of cost which shows all of the coal-gas made on Plant "A" and all of the water-gas made on plant "D" at Astoria, as follows:

	M cu. ft.	Amount	Per M feet
Plant A	3,957,491 0	$1,359,398	3435
D	20,730,536 7	8,530,616	4115
Totals & Average	24,688,027 7	$9,890,014	4006

If we ignore the percentage of water-gas and coal-gas put into the transfer System in 1923, and take it for granted that the Astoria Company operated its four plants to the best advantage in 1923, it would be shown that of the 100% gas made in that year, 14.345% was made at Plant "A", 15.728% at Plant "B", 33.292% at Plant "C", and 36.635% at Plant "D".

If we apply these percentages to the amount of gas that I estimate will be made in the nominal year, we would arrive at the figures shown on the next table:

Plant	Amount made M cu. ft., 1923	% of gas made at Astoria in '23	Amount to be made, M cu. ft., 1924-5
Plant A, Coal Gas	2,553,650	14 345	3,541,497 0
" B, " "	2,799,702	15 728	3,882,933 0
" C, Water Gas	5,926,292	33 292	8,219,138 1
" D, " "	6,521,542	36 635	9,044,459 0
	17,801,186	100 000	24,688,027 7

[fol. 2790] Sheet 14

Using this basis for calculating the reasonable cost to produce gas in the nominal year, and taking as the unit cost the expense per M cubic feet shown on sheets 9a and 9b herein, we would arrive at the following figures:

Estimated Cost of Producing Gas at Astoria

	M cu. ft.	Amount	Cost per M feet
Plant A	3,541,497 6	$1,216,504	.3435
B	3,882,933 0	1,494,541	3849
C	8,219,138 1	3,530,120	4295
D	9,044,459 0	3,721,795	4115
Totals & Average	24,688,027 7	$9,962,960	.4036

[fol. 2791] Direct examination continued by Mr. Donnelly:

I inspected the 14th Street and the 42nd Street plants of the Consolidated Gas Company. I saw in operation the 14th Street plant in 1920. The 14th Street plant was not operating when I first inspected it in the winter of 1919. I had made an inspection at that time. I have inspected the operating records of the 14th Street and the 42nd Street plants of the Consolidated Gas Company.

(Annual Reports of Consolidated Gas Company to the Public Service Commission for 1916 and 1917, received in evidence and marked Defendants' Exhibits Nos. 96 and 97.)

The 14th Street plant in the year 1916 made 1,368 M cubic feet. The books show as the cost per M cubic feet of gas produced at the 14th Street plant in the year 1916, $34.216. The 42nd Street plant made 6,305 M cubic feet of gas in the year 1916. The cost of producing that gas at the 42nd Street plant in the year 1916 was $5.7567 per thousand.

At the 14th Street plant in 1916 it cost for materials used in the production of gas $2,503.62 and for repairs in that year at the 14th Street plant, $14,317.45. As to the 42nd Street plant the cost of materials used in the production of gas in the year 1916 was $5,412.33 and the cost for repairs in that year at that plant, $19,003.80. In 1917, when it cost $5.7567 per M feet to make gas at 42nd Street and $34.21

at the 14th Street plant, it cost to make coal gas at the Astoria plants, 17.48 cents per thousand.

(Annual Reports of the Astoria Light, Heat and Power Company to the Public Service Commission for 1916 and 1917, received in evidence and marked Defendants' Exhibits Nos. 98 and 99.)

I have examined the figures of production in connection with the 14th and 42nd Street plants, respectively, for years other than 1916 up to and including 1923. Those plants made the most in 1920. In that year there were more at [fol. 2792] the 14th Street plant 74,522 M cubic feet. The cost per M in 1920 at 14th Street was $2.1397 per thousand feet for the gas that was reported produced. The cost of producing gas at the Astoria plant in that same year was reported to be 61.87 cents per thousand on the coal gas. At the 42nd Street in 1920, 89,618 M cubic feet of gas were made. By computation it appears to be $2.0983 per thousand feet of gas produced. Not any gas was made at the 14th Street plant in 1921 from 1920 to 1923, both inclusive, or at the 42nd Street plant in 1921, 1922 and 1923.

I have made a study of the plant capacity of the various works of the Consolidated Gas Company and of the Astoria Company for the year 1923 and examined the figures relating to the maximum send-out of gas in the year 1923, and in my opinion the 14th Street plant and the 42nd Street plant were not useful to the plaintiff in the year 1923.

The schedule which you show me was prepared by me. I obtained the data shown thereon by examination of the reports of the companies to the Public Service Commission for 1922 and 1923 and of the monthly book records of the companies.

By Mr. Ransom:

The column headed "Cost per M Produced" is a computation, and in the computation I have included in the figures which I divided, the total amount of repairs and the total amount of other expenses and the total amount of labor at the plants throughout the year. It includes every cost that I found reported, whether it was actually operating or whether it was for watchmen or other expenses. I have taken the total expenses in connection with the plant

[fol. 2793] and divided it by the number of M cubic feet of gas made and sent out of the plant and that is the figure shown in the heading, "Cost per M produced." That is all that it shows.

(Schedule received in evidence, and marked Defendants' Exhibit No. 100.)

By Mr. Donnelly:

There were prepared under my direction from the Street Main Records No. 10 of the plaintiff company tables showing the cost of the mains laid in 1922 and 1923. And these are the schedules which were so prepared and which are marked respectively Defendants' Exhibits 90 and 91. I would like to say I have not examined the typewritten copies, but I did have the working papers and have no reason to believe that these are not accurately transcribed. I say, I have not seen the typewritten sheets before, but I had the original records—transcripts from the records. Mr. Cohen's work was done at my direction and I believe it was accurately done.

Exhibit 90 shows the folio from the book record No. 10. I did not check the typewriting against the original.

By the Master:

It shows the folio number from the book record of mains from which the data was taken. The next column on the left shows the location of work done, as reported in said books,—that is, the laying of a main in a certain street between certain points. The next column shows the sizes of the main that was put in and for whom it was put in, that is, which company. The next column shows whether it was to replace an existing main or was an original main. The [fol. 2794] succeeding column shows the size of the main that was replaced, if there was any replacement. The next column shows when the work was begun and when it was completed, according to the company's record. This is followed by a column showing the length laid expressed in feet and inches. Then under the six next columns there is set up the cost as reported on said books, this being divided into five columns to show the material cost under five headings, and one column to show the labor as reported, these

six columns all being brought together in the final column which shows the total cost as appearing on the Street. Main Record No. 10 of the plaintiff company.

By Mr. Donnelly:

I have in the last three or four years inspected exposed gas mains in the City of New York. I inspected at least 300 openings in this City. I examined the pipes in openings where pipe was exposed, to get an idea of the condition of the pipes, the manner in which they were laid, the depth at which they were laid the obstructions under the surface that would have to be encountered, also the method in which the trenches were held up, the kind of barricades used, and also to note the surface congestion and obstructions that would be met in laying mains in Manhattan principally and some parts of the Bronx, and to get a general idea of the conditions that would have to be faced and have been faced in laying mains and repairing mains and revamping the main system. Prior to 1920, at various times, I made similar inspections of street openings where gas mains and other sub-surface public utility equipment was exposed to a less extent than I did since 1919.

During the past four years I have not observed any gas mains being laid in the Borough of Manhattan where a [fol. 2795] single job was more than one mile in length. I made such an analysis of the cost of laying mains in recent years in the territory of the Brooklyn Union Gas Company. I similarly caused to be made an analysis of the cost of laying mains in recent years in the territory of Kings County Lighting Company particularly and the New York and Queens. During the course of my investigation of the cost of laying mains in other cities in different parts of the country I analyzed the books of a large company for the purpose of ascertaining the cost of laying mains with particular reference to the cost of laying short lengths of mains by piecemeal construction as compared with the cost of laying mains in a single stretch of several miles in length. I analyzed the book cost of laying mains by the People's Gas Light Company of Chicago. The work extended over from 1917 to 1920. The extent of the mains laid by the People's Gas Light & Coke Company as shown on the records that I examined, studied, analyzed, was over $15,000,000.

By the Master:

I have laid mains myself.

By Mr. Ransom:

I have not laid any personally in this country. As to whether I testified in the prior Consolidated case that I never laid mains or supervised the laying of mains in this country, I cannot remember all that I have testified to, but, I have given the same testimony here. I have seen others do it and I have watched them do it and checked up the cost of the work that was done. That is all I claim. Abroad I have actually laid mains.

By Mr. Donnelly:

It is much more expensive to lay mains piecemeal than wholesale. It is cheaper to put in a new main than it is to take out an old one and put in a new one.

[fol. 2796] It shows on these tables I have prepared what mains were laid by plaintiff in 1922 or 1923 to replace mains then existing wherever that was the fact. Where you are laying mains by piecemeal construction and you have to connect a new length to an old length, with gas in the old length, it is more costly to do the work where you are connecting mains that have gas in them. It is more hazardous to do it that way.

By the Master:

The examination of the maps of mains kept by the plaintiff company which show mains in the streets and the points at which they are connected, I believe, enable me to state that there is inter-communication between the mains of the various companies in Manhattan, allowing gas to pass from one low-pressure main of one company to another low-pressure or distribution main of another company.

By Mr. Ransom:

An examination of the record in this case, which I have read, shows that to be a fact as reported by the company.

By Mr. Donnelly:

I found several instances from the Street Main Record No. 10 of the cost of laying 12-inch mains in 1923. I believe all the figures appear here from which it could be calculated what each job costs. Folio 1775 of Street Main Record No. 10 indicates a 12-inch main; whether it replaced an original or not does not appear on the records. The table which is a transcript of Street Main Record No. 10 shows the cost of labor for laying that 12-inch main. The cost of labor employed in laying 12-inch main as disclosed by the record was equivalent to $2.6011 per foot of 12-inch main laid. That work was completed in May, 1923. This job was on 116th Street, north side seven feet east of the west curb of First Avenue; folio 1755. The work of laying that main involved the cutting of paving. That book and that folio [fol. 2797] show payments made to paving contractors to restore paving that had been cut. The restoration figure is shown under other items in the last but one column to the right on Sheet 1 of Exhibit 91. I have figured the cost of the pipe and the specials $2.74559 per foot for materials used in laying the mains. I ascertained from the book record the cost of laying some 6-inch mains in 1923.

Folio 1768 shows the cost of laying one instance of 6-inch main, being an original main, that is, not a replacement. The length of that main was 248 feet. That was laid at 198th Street and the work was completed on the 23rd of May, 1923. The payroll cost per foot for laying the 6-inch main as shown by the company's record was $1.87959 per foot, for the labor and the cost for pipe and specials of that 248 feet of 6-inch main in 1923 was $1.3289 per foot.

Folio 1784 of the street main record, No. 10, shows a main laid by the plaintiff for the New Amsterdam Company six inches in diameter, on the south side of Solarim Avenue, from 6 feet east of the west curb to the center of the roadway on Blackwell's Island. That job was 416 feet long and the cost per foot for labor as shown by the company's record for that job was 65.672 cents per foot, and the total cost of laying that 6-inch main was $2.04238 per foot.

The chart showing four different materials used in the manufacture of gas plant was prepared by me. I got the figures and the charts were made under my direction. I

did not physically do the work. The materials are galvanized iron from sidings and roofs of sides used in buildings, bars and plates such as are used on purifiers and the shapes used in buildings, water gas houses and generally throughout the gas plants. The chart was compiled from [fol. 2798] the monthly review section of the American Metal Market and the Daily Iron and Steel Report, checked as far as possible against other publications such as the Iron Age, the Journal of Commerce and the New York Times, in an endeavor by me to see if the reported costs to the publication were similar to those reported elsewhere. That first paper that I mentioned, is a trade paper.

(Chart marked Defendants' Exhibit 101 for Identification.)

The paper which you have handed me was prepared by me or under my direction. It shows the composite figure, the word, "composite" being the term used in the source from which it was obtained and the computation being an exact copy of the items used in the trade publication, relating to this composite figure. All of the figures that I used in making the charts appear on the chart itself and there is also a graphic presentation of this composite figure. I obtained the figures for the same sources, as the first chart—the monthly review section of the American Metal Market and the Daily Iron and Steel Reports.

(Chart marked Defendants' Exhibit 102 for Identification.)

New York, July 23, 1924.

[fol. 2799] Met pursuant to adjournment.

Earnest Eddy, a witness in behalf of the defendants, resumed the stand:

Direct examination continued by Mr. Donnelly:

Referring to Defendants' Exhibits 49 and 50 which are, respectively, Tables 260 and 262, those were based upon a bulletin from the United States Department of Labor, Bureau of Labor Statistics. The pamphlet entitled "United

States Department of Labor, Bureau of Labor Statistics, wholesale prices 1900 to 1922, No. 335," is a bulletin received by me or taken by me out of the mail from the United States Labor Department, and the slip that I have there is supplementary. This is bulletin No. 335. I believe it is the identical book I had here the other day.

By Mr. Ransom:

I don't personally know who prepared this.

By Mr. Donnelly:

A letter was addressed to the United States Department of Labor, Bureau of Labor Statistics, requesting a copy of this identical pamphlet, and in response to that, I received this pamphlet in the mail from the Bureau of Labor Statistics at Washington.

(Received in evidence and marked Defendants' Exhibit No. 103.)

This communication which you now hand me consisting of nine sheets was likewise received from the United States Department of Labor, Bureau of Labor Statistics, Washington.

(The nine sheets were marked Defendants' Exhibit 104 for Identification.)

I have made a summary of Appendix B of Bulletin No. 335, United States Department of Labor, Bureau of Labor Statistics. Appendix B of Bulletin No. 335 of the United States Department of Labor, Bureau of Labor Statistics. Defendants' Exhibit No. 103, purports to show the groups of commodities for which the Bureau of Labor Statistics, [fol. 2800] United States Department of Labor, prepares index numbers together with commodities, the value expressed in percentage of aggregate value of each group, and of all commodities grouped given to each commodity as mentioned by wholesale exchange value, 1922. I have made a summary of the tables in Appendix. I prepared both of these as a summary. One is the data and the other is explanatory notes, explaining various items that are

marked with letters. There are 404 commodities included in those tables without duplication. I mean there are some commodities which, in considering the sub-groups, appear in each, but for All Commodities Index Numbers, they will be considered but once. For instance, 6-inch cast iron pipe at New York is included in both Metals and Metal Products, and also in Building Materials, but it is considered but once. In many instances the city is shown from which the figures were taken, and in other instances merely the factory, mill and general quotations will be taken. In other cases merely the factory, mill and general quotation is given, as showing say, in a case like Portland cement, the average of six plant prices, and on gravel the average of twenty-two plants prices, and so forth. In three sub-groups on the chart are index numbers prepared in this case. That is, for fuel and lighting, metals and metal products, building materials; then I took another group and grouped all the other groups under it, calling it all other sub-groups which includes the group called Farm Products, Foods, Cloths [fol. 2801] and Clothing, Chemicals and Drugs, House furnishing Goods and Miscellaneous, and then the All Commodities group includes all other. I grouped them according to cities, as shown by the table, except in the case of Portland, Oregon, and San Francisco, California, where I put them all under the title called Pacific Coast Quotations, and then there were a number of cities from which there was only one quotation, which I put under Sundries, and the commodities that were listed as mill and factory, they were put under their general sub-heading, and those that were from mines, there is no place designated; those were just put under General. 154 commodities of the 404 or 38.12 per cent of all the commodities were shown by the table to be New York quotations. The New York City quotations in these All Commodity index numbers were given 31.31 per cent or nearly one-third of the entire. They were given the weight of 34.76 per cent in the groups, or a little over one-third of the entire. Nine of the thirty-two in Building Material or 28.12 per cent, while nine of the thirty-seven in Metals and Metal Products or 24.33 per cent, and eight of the twenty commodities in Fuel and Lighting or 40 per cent were New York quotations—Table 260 being

Defendants' Exhibit No. 49. Those percentages of New York quotations to other quotations in the group shown on Table 260, are: The New York quotations for groups of Fuel and Lighting were 38.25 per cent; Metals and Metal Products, 11.69 per cent; Building Materials, 14.43 per cent; and All Commodities, 31.31 per cent.

[fol. 2802] (Table 300, sheet No. 1, and Table 300, Sheet No. 2, received in evidence and marked Defendants' Exhibit- 105 and 106, respectively.)

Cross-examination by Mr. Ransom:

I never had anything to do with the laying of mains or the operation of a gas distribution system beyond the work I have done on this audit. I did not lay any mains in this audit or operate any gas distribution system in this audit.

With respect to the exhibits embodied in Tables 250 to 253, Exhibits 45 to 47, I could not tell the extent to which I found on the maps parallels between mains of the consolidated Gas Company without going through my notes. I did not prepare any tables here which showed the extent to which there are parallels between two mains of the Consolidated Gas Company exclusively. I can not say separately from the others. My tables show only the parallels as I measured them on the maps as to all mains in the borough of Manhattan. My exhibits 45 and 47 do not in any instance intend to show or confine themselves to the parallels between mains of the Consolidated Gas Company. They may accidentally, but it was not with that object particularly in mind that I prepared the exhibits. I can not anywhere in Tables 45 to 47, tell to what extent there are parallels between the mains of the Consolidated Company alone without reference to notes. I let Mr. Simpson have the record of the actual measurements of mains of those companies.

[fol. 2803] Referring to page 57 of my working papers, I have used Keelox rule, scaled to the inch in sixteenth, which show the results of my scaling these maps which I summarized in these Exhibits 45 to 47. I said that between Downing and Carmine Streets there is a four-inch mutual main 200 feet 8 inches long which is in parallel with another main.

(Witness finds in his working papers an entry where the four-inch parallel Mutual main referred to was included.)

It is my belief that this 6-inch and 4-inch should be a combination of one main. It was misunderstood in reading it. The full distance is 200 feet 8 inches. Between those points on my working papers I show a 6-inch Consolidated, a 4-inch Consolidated, being one main; a 6-inch New Amsterdam, 154 feet approximately, a 6-inch and a 4-inch Mutual. Those show both as 200 feet, but the fact that there is a bracket to the left of them indicates to me that the recorder misunderstood the calling on that. This recording was done by Mr. Hays. I show between those points one 6-inch Consolidated for practically 47 feet, one 4-inch Consolidated for practically 154 feet, and one 6-inch New Amsterdam for practically 154 feet. I show one 6-inch Mutual for 200 feet and one 4-inch Mutual for 200 feet. The mains are all on the map, but the measurements are not the same, I take it from looking at them that the sheet shows. There are three mains there between the points on what you would call the west side of the street. I called it the north side. It does not show four mains, but in my notes here it shows three mains, but the measurements indicate that [fol. 2804] there must have been four mains if the measurements were taken correctly.

(Witness scales map as directed.)

I scaled the entire distance first. The distance is practically 280 feet. So that as to the Consolidated line that distance is made up with the 47 feet of 6-inch and 154 feet of 4-inch as I have taken it into my table. And with respect to the Mutual, 201 feet of main in the street is what it shows on these notes. The marginal note indicates that there is a 4-inch Mutual in there. I do not see any different coloring, although there seems to be a joint in the pipe there. There is 200 feet of 6-inch Mutual, approximately, between those two points; judging by the color and by the marginal note, there must be. There is a 4-inch Consolidated and a 4-inch Mutual also shown on the marginal notes. There is the 4-inch Mutual (indicating). That does not always indicate a change at Carmine Street to a 4-inch Mutual. The over 400 feet of Mutual mains shown in that block in my

table are not there. As to Main Record Map No. 141, Lafayette from Broome to 8th Street, on page 158 of my working papers, I show that on Lafayette Street south of Bleecker to Bond Street there is 285 feet of six 12-inch mains in parallel. I have not examined any testimony in the case about mains. I do not feel that I am competent to say from an engineering standpoint that these six 12-inch mains are simply a short manifolded special of a 30-inch main and are a part of the 30-inch main which runs through that street, or what they represent, except I see that ap- [fol. 2805] parently the same gas carried by those 30-inch mains would be transferred to the other 30-inch mains. In crossing Bleecker Street at Lafayette, you find a 30-inch main coming along and suddenly splitting up into six 12-inch mains across Bleecker Street, and then going back into a 30-inch main. I can not say that the 30-inch main is simply manifolded across Bleecker Street or not. I can say that the 30-inch main is discontinued and apparently the gases in this main must have been transferred to the other 30-inch main through those six-inch gas mains. Further than that I could not say. I do not know whether I could say any more than that the 6-inch mains are connected together by that one 30-inch.

But wherever I found that type of the manifolding of a large main for the purpose of crossing a subway structure, or other condition, I treated those as parallels. With respect to that kind of situation wherever I found it, I assumed whatever the size of the mains was, that they were parallel mains. I suppose that was my method with respect to the entire Island of Manhattan where I came to conditions where mains were manifolded in crossing subways or for other purposes. I do not recall very many such instances at the present time. There were some on Park Avenue; I recall that. There may have been a great many of them.

Map 17, my working papers show that on William Street from Chambers to Pearl, there is a 6-inch Consolidated and a 4-inch Consolidated in parallel 285 feet long and a 6 and 4-inch Mutual in parallel 285 feet long. According to my [fol. 2806] working papers there would be two mains, but they would be for the extent of 570 feet. That is the way the working papers show. There would be two mains, because they are bracketed here, indicating that there are two

mains only. The 6-inch and the 4-inch are changes from one to the other. That is what the working papers indicate. I would show four times 285; for the entire extent of the mains, that would be so, between the two points.

(Witness scales map.)

Well, according to this scale the shorter one of the mains would be 283 feet and the other would be about 285. In other words, there are two mains, neither of which is over 285. The tabulation indicates in my working papers that there is double the distance practically. There are two mains of 285 feet; this indicates that there are two mains of 570 feet or twice this distance.

On Main Record No. 32, which is Cherry Street and Catherine Street to the East River—I took the working sheet figure in my tabulation. This working sheet shows that from Clinton to Montgomery Street there is 667 feet 6 inches of 6-inch Mutual main and a like amount of 6-inch Consolidated main. In making these measurements I am assuming that I took the same starting point that I am taking now. It is not possible to determine in the case of a map of this kind without beginning at the beginning of the map. I cannot tell my starting point; not on this kind of a map. I would say it is about 522 feet. 667 feet 6 inches is what the working papers show. From Clinton to Mont- [fol. 2807] gomery there is 522 feet instead of 667 feet 6 inches. That would be scaling it by itself. The difference in starting point should not account for a difference of 150 feet. The parallel distance between Clinton and Montgomery Street would not be in excess, I should say, of 522 or 523 feet. It might be about three feet less if I measured it to the beginning of that street. 667 feet 6 inches of parallel mains is what the notes indicate. That is what I showed on my summary.

Main Map Record No. 257, which is from 49th Street and Fifth Avenue to the East River, and referring to page 256 of my working papers. I show there two 16-inch mains in parallel for a distance of 586 feet 10 inches between Lexington and Madison. Lexington to Third, 219. Park to Lexington I show 404 feet. That is one of them. There is another item; Madison and Park. The total distance seems to be 399 feet. There is a combination of two mains there.

The two 16-inch mains on this map—those transfer mains across Park Avenue—the things which are labeled "Transfer Mains," whether it is a special manifolding of the 20-inch main across the New York Central Railroad at that point, I do not know. Across Park Avenue the split is continued to Lexington Avenue, possibly across Park Avenue and then across the Lexington Avenue subway. It does not show to cross Lexington Avenue here, but it shows on the map that the mains disappear at Lexington Avenue. Where they go to I have no means of knowing at present. It would be shown by some other map. I go down that [fol. 2808] Lexington Avenue subway practically every morning.

On Map 257 with respect to the manifolding of mains across Park Avenue, I have included that as an instance of paralleling as two parallel transfer mains.

On Map 251 in the 46th Street region, on page 253 of my working papers, I show three 16-inches on one side and two on the other. We would tabulate them as three and two. There would be one parallel main on one side and two on the other side of the street on our basis. The other would be three because there is an eight-inch Municipal on the same side, and my working papers and tabulations treat this as constituting a parallel for that distance. 401 feet in one case and 400 feet in the other. I did not so find that that was simply another instance of a large 30-inch main being split up for the crossing of the Park Avenue viaduct. It may be. The map does not show it positively. By reference to intersection maps it might be possible to ascertain that such is the fact. I have a 30-inch main coming to Madison Avenue, but I do not know that I have that split up into these five mains. I did not look on any other map except in the measurement of the other map I picked up the intersections which showed the conditions at the corner of Madison Avenue and 46th Street. I haven't any active doubt in my mind at the present time that I saw such a map. I could not say that I actually saw it. This map 251 does not show the mains and the intersections on the north and [fol. 2809] south streets at that point. As I say, you have five 16-inch mains between Madison and Park and also five between Park and Lexington, but whether or not they cross Park and Lexington Avenues, I would not say. The infer-

ence is permissible that they probably do cross those streets. With respect to all of the instances in which large mains like 30 or 36-inch are manifolded and split up for the purpose of crossing the New York Central Viaduct or subway construction or railroads or any special condition of that sort, I have treated them as parallel for the purpose of my tabulation. I treated cases of this kind as parallel, and that is true throughout Manhattan, so far as I know now.

Take Map 645, page 581 of my working papers. Crossing Broadway at 20th Street are three 20-inch mains in parallel for a distance of 68 feet. There is a transfer main of 30-inch on either end of those three mains—a 30 inch transfer apparently from the map. I do not know that there is a subway in Broadway at that point. I did not in any way tabulate the figures shown on these maps as to the depth of mains at any point. Wherever I found three mains running together in that fashion, a 30-inch main, for example, has to be manifolded in order to cross a given point like the roof of a subway, because of the shallowness of the cover on that point—I considered them as three parallel mains.

Take map 34, the Roosevelt Street region, between New Chambers and New Bowery. On the east side I show one 6-inch Mutual for 266 feet; one 4-inch Mutual for seven [fol. 2810] feet, and one 4-inch Consolidated for 274 feet practically. After scaling map, I find it is 213 feet instead of 273 feet; that is the 4 inch Consolidated. The 4-inch Mutual is practically seven feet. The other, the 6-inch, would be 206 feet instead of 266. The 266 and the 274 feet being the figures shown in my working papers.

Map 53, Franklin Street, Church Street to Franklin Place. From Church to Franklin I show a 6-inch Mutual and a 6-inch Consolidated on the south side, each for 374 feet. According to the map there are 315 feet—an error of 59 feet approximately.

Take Map 54. At page 55 of my working papers, Beach Street from Hudson to Varick. 270 feet is shown there with respect to the 6-inch Mutual main, and 12-inch Consolidated for 474 feet. Scaling map it is 408 feet, practically. It would be a difference of 65 feet.

On Elm Street from Reade to Duane, according to the map, there are 6-inch Mutual and 30-inch Consolidated in parallel, but I do not find this in my working papers.

On Lafayette Street from Worth to Canal Streets, the 30-inch Consolidated main and the 6-inch Mutual main would be called in parallel, according to the latter part of our work, but I do not see any indication of them in my working papers. As to my statement that the mains would be considered parallel according to the latter part of my work, I did change the basis of my work to a certain extent while it was in progress.

[fol. 2811] Looking at the map of Lafayette Street from Canal to Broome Streets, judging from the looks of it, I would say there is not much more than 1,500 feet of mains in parallel that I have omitted entirely. Roughly, there are about 1,200 feet between Canal and Broome and it is quite likely that I left that out.

I do not know whether I included the splitting up of the large main in order to cross the subway structure at Lafayette and Canal Street as an instance of parallel mains, the same as elsewhere, or not. I do not know whether they are split up or not. I know I included those particular items. Whether they were spilt up from larger mains or not, I cannot say.

[fol. 2812] Take Map 512, First Avenue from Houston to Eighth Street. That portion of First Avenue from First to Seventh Street would be page 346 of my working papers. In the street there is a 6-inch Mutual main as well as a 16-inch Consolidated. Taking the First Street corner first, there is a 6-inch Mutual and a 16-inch Consolidated. I do not see any such main—the 6-inch Mutual—in my working papers. It is not on the working sheet. It would not be on my tabulation, not being on the working sheet. That is a distance of 1700 feet, approximately.

Maps 164 and 165, which are Fourth Street from Thirteenth Street to the Bowery, and Fourth Street from the Bowery to the East River, respectively. On page 196 of my working papers, I have measured that from the Bowery to Second Avenue on the North side there is a 4-inch Consolidated and a 6-inch Consolidated in parallel for a distance of approximately the area I took. It is something like 80-100ths of a square mile. I do not think it is a full square mile. Taking it at random, I used one of these small maps and laid off—the saying is "Twenty blocks north and south is a mile in New York City," and

then afterwards it was measured by someone else who determined the exact area. In this particular map, the white sheet of paper which counsel had is the same area as the area which I took. This is the district that I took. Whether it is correctly laid out on this map I do not know. I have no doubt it is. I took from 14th to 34th Street and [fol. 2813] from Tenth to Fifth Avenue. There are not many areas in the Borough of Manhattan where you could have done the same thing. It seems that there is one place there east of Central Park where such an area could have been picked out. From 63rd Street anywhere up to 91st Street, which allowed considerable leeway, is an area in which there are no oblique streets, and in the area that I picked out there was at least one oblique street. I could have picked out the area between 34th Street and 59th Street apparently on the east side. The west side, Broadway would run there. Apparently I could have picked on the east side anywhere from 34th Street to the Park or the portion of the east side east of Central Park without having any oblique streets. Immediately north of Central Park, starting at 110th Street, is an area in which there is one oblique street, namely, St. Nicholas Avenue, but there is a park in there, as also in the case of this district down around the Grand Central Station. That is not particularly the reason that led me to take the area in which was located the Pennsylvania Station; and all of Park Avenue is the same way for most of the distance on the east side there, and that was the reason why I left that out. I would not swear to it, but apparently the district which I picked out is not the district that has the largest number of parallel mains. I would say from 14th Street, beginning at about Fourth Avenue and extending over here beyond First, that is, east of Fifth Avenue, there were more parallel mains north of 14th Street than there are west of Fifth Avenue. I am not sure, but that is my impression. First Avenue and Second Avenue and 14th [fol. 2814] Street are all very badly paralleled.

I have a very high regard for Mr. Simpson's veracity. If he stated under oath that I had picked out the area which had the largest number of parallel mains to the square mile, I probably would say that he was making a correct statement.

(Map marked Plaintiff's Exhibit No. 989 for Identification.)

Square sheet of blank paper which the witness used marked Plaintiff's Exhibit No. 990 for Identification.)

I did not testify to Table 252, Sheet 1—I think 250 was the one that I testified to.

[fol. 2815] HAROLD M. OLMSTED, a witness in behalf of the defendants, resumed the stand.

Cross-examination by Mr. Ransom:

Referring to Exhibit 47, Table 252, Sheet 1, Map 553, Park Avenue, 37th Street to 49th Street, on the west side of Park Avenue from 36th to 40th Street, I show simply an 8-inch Standard main. I made a part of this Exhibit. Mr. Eddy made up the rest of it, and I checked it back with him. I checked it and swear it is correct. The 8 inch Standard main on the west side of Park Avenue, 36th to 40th Street apparently is an error. I see no such main on the map at the present time. I checked Mr. Eddy's tabulations not to this map but to his working papers. That is, I did not check this exhibit which I have sworn to be correct to the map, then, in any instance.

Take map 555, Table 252, Sheet 1: on the east side of Park Avenue from 68th to 70th Streets the map shows both in the street and in the heading a 10 inch Standard main, that entire distance. It is not on the diagram which I have sworn is correct. In that instance Exhibit 47 is an error.

Fourth Avenue, 13th Street to the Bowery, Map 164, Table 223, Sheet 3, shows as a parallel main an eight-inch Consolidated main on the south side of West 4th Street from Barrow to Jones Street. The parallel main on the map that my diagram shows apparently stops at Barrow Street and is not in the stretch from Barrow to Jones Street. I do swear that my diagram is correct. I will state that I checked it with Mr. Eddy's data.

Exhibit No. 156, Table 252, Sheet 3, shows a 6 inch [fol. 2816] New Amsterdam main and a 4 inch Mutual main running parallel on the south side of Fifth Street from

the Bowery to Avenue D for the whole distance. On this map there are no parallel mains at all between Avenues B and C on the south side of Fifth Street. There is on my diagram.

Map 162, my Table 252, Sheet 3, shows two 6-inch Consolidated mains on the south side of Great Jones from Broadway to Lafayette; one is marked Mutual, that, of course being a Consolidated Company. On Record Map 162, referring to those two 6-inch Consolidated mains on the south side of Great Jones Street, there apparently is only a 6-inch Mutual; well, there is a 6-inch Consolidated at the east end of that distance for approximately 20 or 25 feet. I show a 6-inch Mutual and a 6-inch Consolidated for the entire distance, the Consolidated being an error for part of that distance; an error for nearly all the distance. There is only 30 feet of Consolidated there, or 25 feet.

[fol. 2817] Earnest Eddy, a witness in behalf of the defendants resumed the stand.

Cross-examination by Mr. Ransom:

I find that the 30-inch main apparently branches into five Consolidated small mains 16 inches in diameter at 46th Street and Madison Avenue. Referring to Map 542, where I had a similar situation, at 46th Street and Lexington Avenue, I find there that the large main divides into five smaller ones, but the purpose I don't know anything about. I presume it divides to cross Lexington Avenue and then it goes back into the larger size again. I recall the preceding map. It seems like the large main at the corner of 49th Street and Lexington Avenue runs across Lexington Avenue. I would not say that the divisions go across Park Avenue, as the large main comes across Lexington Avenue and then divides in the block before reaching Park Avenue at 49th Street, going west on 49th Street, because it looks like a dead main there. That is, it looks like it was cut in two there and not connected at all. I saw the previous diagram.

[fol. 2818] A. S. B. Little, a witness in behalf of the defendants, resumed the stand.

Cross-examination by Mr. Ransom:

I have visited the Manhattan plants of the Consolidated Gas Company. I was at the New York Mutual plant last week; at the former New York Mutual plant last Friday, and at the 21st Street plant last week or recently.

These Manhattan plants, in comparison with other gas plants that I have seen in various parts of the country are reasonably efficient, well-designed and excellently maintained, with the exception perhaps that at the Mutual plant some of the generating machines are not quite up to date. When I saw the Mutual plant, it was in an excellent state of maintenance; not only in the machines but I was agreeably surprised at the state of upkeep of the surrounding parts. It is what you would call a compact plant. I would call all three of these Manhattan plants very compact, particularly so as to the 21st Street plant. That is compact maybe to the extent of being a little crowded. That is, if anything, the 21st Street plant is a little crowded. The 99th Street plant was compact only. With respect to the Mutual, compact, but not too crowded. That is, the land is reasonably used, but not crowded. The Astoria plant was a well-equipped and well maintained plant. I haven't seen the Standard plant recently. I would say the Mutual is in a very good state of repair and upkeep. The Astoria is, too. At the 21st Street plant the machines appear to be in good shape, but at the time I inspected it there was a [fol. 2819] lot of construction work going on which made the plant look untidy and maybe a little difficult to operate, due to the construction work that was going on. As compared with the Mutual or Astoria plants, this construction work made it somewhat untidy and mussed up, and maybe a little expensive to operate under those conditions. Limiting it to the physical condition, these plants were in an excellent state of upkeep and repair. Upkeep and repair relate to physical condition, not to operating methods. I mean I am not taking into account possible obsolescence when I give that answer. I was taking into account their state of repair and upkeep.

I would not say that there has been a loss in capacity or efficiency as to all of these plants as compared with their capacity and efficiency when they were first built. I might say that the 12 foot machines at the Mutual are not of as great a capacity as a present 12-foot set would be, but they are at least of equal or probably of greater capacity than when they were first installed, due to the additions that have been made by the plaintiff.

When I referred a few moments ago to the fact that some of the machinery at the Mutual plant was not quite as modern as that at other plants, I had in mind the 12-foot machines and appurtenances such as the blowers. These 12-foot machines and their appurtenances will make as much as or more gas than those machines would when they were installed; but that it would be possible now to procure 12-foot machines which would, when installed, make more gas [fol. 2820] than the 12-foot machines such as those which are there now. There has been some progress in the art or some difference has developed in the type of machines which enables us to get a larger capacity out of some 12-foot sets as now built; you might say larger capacity in proportion to the ground space occupied.

You could not have coal-gas in the Borough of Manhattan. I don't think it is physically possible to work coal-gas in Manhattan at any time, due to the smoke and nuisance, and the space it would take to make coal gas on a large scale. I don't think under present-day conditions any coal-gas operation in the Borough of Manhattan could be done. I don't believe the City would permit it.

I agree with the judgment of the officers of the Consolidated Gas Company in withdrawing from use in 1923 the two coal-gas plants in Manhattan and providing equivalent water gas capacity in Manhattan. I would not dispute the statement at all that taking into account both the direct operating cost and the cost of the carrying charges on the investment—that is, taking into account both the operating expenses and the carrying charges on the amount of property used in the manufacture of gas—that the 21st and former Mutual plants, and the 99th Street plant, are reasonably efficient and economical plants compared with others that I have seen in different parts of the country. In determining whether a given plant or a unit in a plant is

economical or not, both the direct outlays for labor and materials in operation and the cost of money or carrying charges on the amount of property required should be taken into account, but it sometimes is not done. I would do that, [fol. 2821] and have always done that. That is, for example, the fact that one plant has a little lower direct operating cost as compared with another plant, would not in itself determine that the first plant was the more economical or vice versa. You would have to study the whole thing, and find out what it would cost to put the old plant in a position to make gas as economically as a new plant; that is, find out what your carrying charges were and see if they were high enough to offset any saving you would get in the direct manufacturing cost. That might be true of two plants installed on the same date. For example, in one plant you might have more labor-saving machinery for handling coal and the like, than in another. Consequently in the plant that had the less of the labor-saving machinery, you would have the higher labor costs of operation, probably. I will go as far as to say that, on carrying charges, the plant with the more labor-saving machinery would have the higher carrying charges upon the value of the property. I would not say as to repairs; that would be too general. In some cases the repairs to work tools are as much as they are on an automatic system.

But at least you have got to take into account two things: On the one side the direct cost of labor and materials and on the other the carrying charges on the present value of the property; and a further thing, that I have always taken into account, and that is the amount of power used in driving these labor-saving devices, and the generating of current or air pressure. In a plant where you had a high labor cost for the handling of fuel, you might have in another [fol. 2822] plant not only the additional carrying charges on the present value of the property that takes the place of labor in the other plants, but you would have the cost of the electric current or steam power which drives these labor-saving devices. As I say, those are the things that I would take into account. And in making this balance between operating charges, direct operating charges on the one hand and return on the property on the other, you would take into account all of the elements of present value of

the property. Fixed capital and working capital in the final determination,—I would take it into account. I was just wondering where working capital would come in. It would come in in connection with operation, but I don't see that there would be much difference between one plant and the other. I have never looked upon going value as attaching to a manufacturing plant, but as attaching to the business which keeps that manufacturing plant alive. It is an element to be taken into account, as I have testified before in this Court.

Coming back to the 11th Street and 21st Street and 99th Street plants, in Manhattan, I would not advise their abandonment and withdrawal from use by the company now, 1924 or 1925. It could not be done. I would not advise it if it could be done. I would not advise it at any time in the next five or ten years, until you can get property in its place, and then it would be dependent on whether you could get full sale value. I mean you could not throw plants on the market any minute and sell them wisely. The directors have to take into account when is the best time to sell, "When can I get the most for it?"

[fol. 2823] There are, as has been testified to here by several witnesses, substantial, practical advantages in manufacturing some of the gas in Manhattan; there are some advantages—no doubt about it. As to 11th Street and 21st Street, under the conditions as they now stand, I would not advise the abandonment and withdrawal from use these three Manhattan plants. As to 99th Street, I would not be so positive. At 99th Street it might be that it would be a good plan—I believe it would—to keep that as an experimental station. It is of a size that would permit you to operate it and, if it went out of business one day through your experimentation, it would not seriously affect you; but by experimenting on that plant you might get considerable economies applicable to the other plants. Use it as a research station, like many plants do in Europe. Under the European practice some of the smaller plants which actually manufacture gas for commercial purposes are operated on what might be regarded to some extent as an experimental basis. I so built one of that character in Birmingham. The gas which they made would be sent out on the district; it would not be lost. But I would try

various fuels and various combinations and various types of apparatus, with a view to ever seeking better results.

By the Master:

On an average that would necessarily result in the gas at that plant being made at a higher cost of production, because I think if you did run it that way you would have the best men you could get in that plant so that when you conducted an experiment you would know that you could rely [fol. 2824] upon their statements, that they were accurate and not trying to fool anybody. I would say at least during those times when they were experimenting, because the 99th Street plant has shown some good results, better than the 21st Street plant, for instance.

By Mr. Ransom:

As a small plant and situated as it is, the 99th Street plant has shown some very fine results, taking into account only the direct cost of labor and materials. That was brought out in the last case by Colonel Hayward, and I investigated it in this case to see if the conditions were about the same. And because of its size and because of its location and because of its fine operating record, I think it would be a good plant for the company to use for that purpose instead of using a part of some large plant. It is not necessary to have it as a part of a unit, and there are considerable advantages in not having it so, because there is no chance then of the gas passing into the wrong meter, and you can have everything as a unit and tell what is going on in that particular plant. If anything happened in experimentations it would not disturb the manufacture of gas in the other plants, and it would affect only this one unit, and it is not large enough to affect the total operation through having it out for a day or more.

So I would advise the continued manufacture of gas in three Manhattan water gas plants at the present time and for the next five years at least. You could not build a plant to take their place in less than five years. Beyond that it would be speculative. I say speculative because a whole lot would depend upon the growth of the consumption [fol. 2825] in the territory.

Under present conditions in the gas industry, having in mind the physical location of Manhattan Island and these rivers and tunnels, as to the lower part of Manhattan, there are advantages as to assurance of continuity of service in making some gas in Manhattan. If I were in charge of the operation of this company or a similar company in this territory, I would feel that I had better certainly of keeping gas going in lower Manhattan if the 11th Street and 21st Street plants were there and were operating, because there might be a break in the main system which would put the lower end of Manhattan in danger unless you had plants near the center of the territory from which gas can be furnished. I say that a single gigantic plant is not necessarily the best policy in a condition like Manhattan and the Bronx. Of course I believe that two big plants would be better than a lot of little plants—three big plants, perhaps, assuming factors of location were favorable.

By the Master:

You can not get one large plant in Manhattan, having regard to cost. The original question was not restricted to Manhattan.

By Mr. Ransom:

Of course, I would not favor putting in Manhattan one of these two big plants which I have in mind as the ultimate ideal. The real estate would be prohibitive in price for one thing, and the difficulties of getting materials to and waste products from the plant would be almost insuperable. I am in accord with the policy of the company in having one large plant across the East River at Astoria, particularly on account of the deep water there. I likewise thought it [fol. 2826] was wise to develop capacity at a new plant site such as Hunts Point, taking into consideration that the growth of the territory is always northward. It will not grow much to the south, toward Manhattan, and you want to get your plant approximately in the center of distribution, so that you can take care of the needs of the northern end of Manhattan, Harlem and the Bronx, even if Astoria is closed down. Otherwise you would be relying upon a line of metal under the river to a certain extent. So that

the planning of a plant to take care of future needs on this side of the East River is the logical thing to do. I think, when it is needed. I think that the Hunts Point plant, as it has been testified to in this case, is a soundly conceived project.

Exhibit No. 95, which is my estimate of production cost for a year ending on the 30th of April of next year, is based on making both coal gas and water gas in the same proportions.

My study of estimated production cost for this year ending next April is based on the continued making of coal and water gas in the same proportions as are now being made, at Astoria; that is one of the estimates, one of the five, that being on page 14. Of course, the unit cost of each kind of gas at each plant is the same in every case, but it is applied differently, if we assume such different proportions of coal-gas and water gas sent on to the system as was revealed by the proportions made at all of the system plants [fol. 2827] in the present proportions of the two kinds of gas at Astoria. That is one of the standards taken. As to your questions whether with a standard requiring not less than 650 British thermal units on the district, I thought the Consolidated Gas Company could make coal—gas, I am not quite clear as to what you mean by "on the district," do you mean in every part of the district? On sheet 1 of my exhibit where I refer to the cost *fo* produce gas to all consumers with a maximum of 650 B. T. U. per cubic foot, I mean a minimum of 650 B. T. U. per cubic foot.

If you mean to "furnish" 650 as a minimum, you could not make coal-gas in the territory of the Consolidated Gas Company and its affiliated gas companies or anywhere else.

By the Master:

Because coal-gas cannot be made of that heat value unless possibly by a low temperature distillation process, [fol. 2828] which would not be economical and I do not think would be feasible. Coal-gas will give you about 570 or 580 B. t. u.'s when made; that is without the water-gas. Now, if you had to enrich the coal-gas so that the mixture would be 650 when it reached the most remote point of the territory, you could not make water-gas sufficiently rich to enrich coal-gas so that the mixture would be of that quality.

By Mr. Ransom:

So that in my judgment, as a practical matter, you could not make coal-gas and water-gas in this territory in such a combination as to fulfill that kind of a standard. So that if the standard of 650 minimum for all consumers should become effective, I would not advise the building of any more coal gas plants at Hunts Point or at Astoria or anywhere in this territory. The existing coal-gas plants, as a practical matter, could not operate: not to give that quality of service. So that as to the 650 B. t. u. requirement of this statute, I regard it as unwise and uneconomical, assuming that it means by "furnishing" a delivery to all consumers, then I would say that it is not possible to fulfill that requirement.

[fol. 2829] A 650-minimum standard defined in any way is not an economical or advantageous standard. That could be done, but it would not be in the best interests of the consumers to do it. But defined as I have defined it, namely, the furnishing of gas to all consumers of a minimum of 650 B. t. u., I would say that was impossible in this territory without hesitation, because it is impossible. If it were possible it would not be economical to the consumers. Even if this were defined in such a way that it were physically possible, it still would be wasteful in that the consumers would not get a service proportionate to the cost of manufacturing and distributing such gas—would get a lot less for their money, in my judgment and in my experience. There would be some dangers to life and property from a standard of not less than 650 B. t. u. on the district. That is both my judgment, observation and experience of the qualities of gas on consumers' premises.

My estimate of the cost of production or reasonable operating cost for the 12 months ended April 30th, 1925 is made up on the basis of making all of the gas at Astoria.

By the Master:

If a standard of 650 B. t. u. minimum were to be applied and enforced here, you could not make it with water-gas. Even with water-gas they could not make and deliver water-gas of 650 B. t. u. to every point in the system. When I first saw the Act after it was passed, I thought that "furnishing" meant testing at the plant or a mile from the

plant, as had always been done before, but on looking the matter up and ascertaining what "furnishing" meant, then my opinion was entirely changed. They cannot make gas that will deliver to every consumer a minimum of 650 B. [fol. 2830] t. u.'s, whether they make it with water-gas or coal gas or a mixture. The only way to do it would be by using natural gas.

By Mr. Ransom:

I do not think you could do it with oil gas. You could not pump it over the distances you have in Manhattan with a straight oil gas. With acetylene gas you could do it. Even if you could manufacture a gas which could be delivered at not less than 650 B. t. u. in the remote parts of this district, they would never know what they were going to get, because one day you would have maybe 650 and the other day you would have nearly 900, maybe. It would not be safe, it would not be economical, it would be a waste and it would be hazardous both as to life and property.

My own definition as to what is meant by this 650 B. t. u. standard is that which I have embodied on Sheet 1. If I said "maximum" that should be "minimum," with the exception that there is a typographical error as to maximum rather than minimum.

My estimate in this study was made up on the basis that all of the gas would be made at Astoria of the quality that was actually made on an average there last year. My exhibit is not in any way made up to show the cost of making gas of not less than 650 B. t. u. anywhere. And I have just said that gas of this statutory quality could not be made in this district at Astoria or anywhere else and delivered. The normal working capacity of the Astoria plant as it now stands that the company rates it at is about 86,000,000 feet a day. I think you could make a little more than that; that [fol. 2831] is, not over a long period. You could not make much more per day than that. As a normal working capacity 86,000,000 was approximately right for the Astoria plant, coal-gas and water-gas. Of course, under a 650 B. t. u. standard the coal gas could not be operated at all, and the water-gas would be operated at a lower capacity. I have seen in the record that taking even the quality of water-gas which was made during 1923, according to the testimony of

Mr. Woods and other witnesses approximately 20 per cent of the Astoria plant—that is, 20 per cent of its capacity, is used by the companies of the system other than the Consolidated, and I have no reason to disagree with it. On that basis the actual capacity which would be available to the Consolidated Company at the period of peak demand in the existing Astoria plant would be between 68,000,000 and 70,000,000 cubic feet of gas per day, if you assume that they would still keep delivery up to the other subsidiaries of the 20 per cent that those subsidiaries take of the Astoria capacity. That is, if these other companies still had to get the quantity of gas which they now purchase from Astoria, you would have about 68,000,000 or 70,000,000 cubic feet of normal working capacity at Astoria left for the Consolidated. That is mathematically sound.

The actual maximum daily requirement of the Consolidated Gas Company alone during the past winter, namely, 1923-1924, is shown on Mr. Woods' joint facility reports. My recollection is it is about 120,500,000 cubic feet in 1923-1924.

By the Master:

Mr. Woods' report gives the whole system. I was checking back what the others were. I think the total was about 180,000,000 maximum days' sendout for the system in 1923-1924.

By Mr. Ransom:

In the manufacture and distribution of gas under Metro-
[fol. 2832] politan conditions a company must have a reserve manufacturing capacity over its peak demand already realized, otherwise the service might go out. That is inconceivable. That is, it has to have reserve capacity to provide for possible and prospective increases in peak demand and also has to have reserve capacity to keep service going in the event of accident at a single plant or in a tunnel or something of that sort. It is my recollection that was the amount that I testified to in the Newton vs. Consolidated case—20 per cent., for a reserve manufacturing capacity, on an average over the peak already realized. I then testified that you could never have exactly 20. Sometimes you would have 15 and sometimes you would have 25,

because you cannot build gas plants over night. Mr. Woods testified to the general effect that as soon as he found the reserve manufacturing capacity dropping below 20 per cent., he realized that it was time to build and build expeditiously. That would agree with my judgment. Of course, while he was building it might get down to 15 or even less. While he was building it might go to 15 or 17, and after he had built it might be up to 25 or 27; that is, about 20, necessarily. Not as high as 30, I think. That would be a little excessive. Under the conditions of Manhattan and the Bronx as long as you had several and separated plants the reserve need not go as high as 30. That would be excessive. 20 was reasonable under the conditions here.

By the Master:

In building they would almost inevitably build in excess of what they regarded as the safe average reserve as based [fol. 2833] on present conditions, in order to take care of the future. That is what I intended to convey by my answer. That is, if they were to require 20 per cent today, it would be good judgment to proceed to build what would be 25 per cent over today's requirements in order that by the time they got the additional capacity completed, it would give them 20 per cent over their demand. You cannot build a small plant. When you begin to build you have got to build ahead and build something that will stand for some years. Therefore you are a little over capacity, and then when that capacity is worn out or used up then you are getting down to normal, and during the period of construction the reserve might run down to 15 per cent.

By Mr. Ransom:

I remember at the time of the prior Consolidated case there had been indications of its having gone down to 17 per cent. and before the case was over, the additional "D" house at Astoria was being built then to prevent a further decline.

Under present-day conditions either coal gas or water gas construction is commonly made in units of substantial size; it would be bad policy to do anything else. That is, in building, for example, at a plant like Hunts Point, you would put in these units of 36,000,000, or something like that, or a

half of it, as an initial installation; that is, on water gas. I would not put in less than 20,000,000 on coal gas. With respect to the plant capacity in keeping up the reserve, when I found the reserve dropping below or apparently about [fol. 2834] to drop about 20 per cent, I would begin to lay my plans, any way, for what type of plant would have to be put in. You have always got to look ahead. You would not know what to build unless you knew the type—what quality of gas you were going to furnish. That is, as long as there was a 650 B. t. u. standard required, you could not build anything but water gas and that would not help you very much. You need water gas on a 600 B. t. u., too. That is, if you had a 600 B. t. u. you would make both coal and water gas. No matter what B. t. u. you have, you ought to make both coal gas and water gas.

Without any question, under all factors, taking into account New York City conditions, a mixed gas, coal and water gas, is a desirable combination; not only New York, but practically everywhere. That is, where it was practical, I would prefer that as producing a serviceable gas commodity, from the viewpoint of the consumers as well as from the viewpoint of the producing engineers.

By the Master:

That is due to the economical operation of the gas that is delivered. Quality hasn't much to do with it, although it is a good thing to have a water gas plant, because you can change your quality almost incidentally. That is, the coal gas is fixed, if it goes down—suppose your retorts begin to get leaky or your exhausters run too fast, you begin to get a weak gas which sometimes runs away from the operators. They can then by the use of recording calorimeters see if the quality is going down and begin to make a higher quality of water gas so as to keep up the standard.

[fol. 2835] By Mr. Ransom:

If you have one hundred and twenty million of daily requirements already realized by the Consolidated Company alone the past winter, and if you assume a reserve capacity of twenty per cent of the maximum day, you would have a present plant capacity required for the Consolidated of

nearly one hundred and forty-five million daily capacity. So that if you now have available at Astoria only sixty-eight million to seventy million cubic feet of normal working capacity, in order to make all of the gas at Astoria, indicated in my exhibits, it would require a present addition of about seventy-five million cubic feet of daily capacity at Astoria, assuming a certain proportion of the gas is still to be delivered to the other subsidiaries. Or, if you devoted the entire eighty six million of Astoria capacity to the manufacture of gas for the Consolidated Company, you would have to add close to sixty million even on that basis to the Astoria plants.

By the Master:

It would be possible to make that addition to the Astoria plant and operate it efficiently and economically. Taking it as a plant alone, they could easily add that capacity to Astoria by building new units. They have the land there and the necessary plant could be installed and still be operated efficiently and economically, but of course I would not like to go as far as to say that that is what should be done, because then you would be getting pretty nearly all your eggs in one basket. In that event, if anything happened to the tunnels, Manhattan would be in a serious [fol. 2836] fix. I was saying plants similar to Astoria. Whether you built one at Hunts Point and one at Astoria, would be a matter of consideration.

By Mr. Ransom:

As a practical matter I would not advise this company to add seventy-five million of capacity at Astoria today; not until something else was made at other plants. That is, not until quite some capacity had been developed at Hunts Point.

By the Master:

There would be a risk to the service in having such a large capacity together—such a large proportion of the necessary capacity, in view of the East River intervening between the manufacturing point and the point of use. It is desirable to have not less than two large units in order

to guard against the temporary disability of one of them from unforeseen causes; possibly more as the territory grows. It may be necessary later on to go way up near Yonkers.

By Mr. Ransom:

At least the Consolidated should have an Astoria plant and a Hunts Point plant and also plants at 11th Street and 21st Street to insure service at lower Manhattan, and at least for the present continuing the operation of 99th Street for experimentation on a large scale. I believe that should be the method of developing the business. Of course, after five years it is speculative as to what would happen as to 11th Street and 21st Street, also the extent to which you would build up Hunts Point, so much depends upon the growth of the consumption and a whole lot depends upon whether the company is going to furnish a gas that can be used for industrial purposes. Gas from Hunts Point will [fol. 2837] not have to be brought under the river in any such deep tunnels as is necessary with respect to gas from Astoria. There is an element of added safety and certainty of supply in that.

My assumption was that this increase of about 75,000,000, or at least 60,000,000 at Astoria, will be in the same percentage of both coal and water gas as exists in the present plant.

A coal gas plant costs approximately twice as much as a water gas plant per unit of capacity at this time, if you include the land. A coal gas plant, in fact, requires more than three times as much area as a water gas plant per unit of capacity, if you take into account the storage of coal and the storage of coke and gas. Even as to the manufacturing capacity itself, I would still say more than that.

By the Master:

I still say it is good judgment for a company to build a percentage of coal gas. There is no question about it; I think that is undoubtedly so. It wouldn't necessarily follow that the cost of the coal gas, when you take into consideration the additional return on the investment required, would be equal to or in excess of the manufacture of water gas. Of course, that condition might change from year to

year. You have got to watch your oil market, you have got to watch your bituminous market, you have got to watch your coke market, too; but you ought to have the plants there even if sometimes you do not use all of them, because you have got to be ready to take advantage of the market conditions, and labor also, because it takes a great deal of labor to operate a coal gas plant, but very little to [fol. 2838] operate a water gas plant. In other words, the gas engineer and gas manager ought to be more or less independent of any outside sources, and he can not be unless he has coal gas and water gas.

By Mr. Ransom:

That is, in my experience sometimes coal gas is more economical than water gas and sometimes the other way, taking into account both the direct cost of operation and the return on the present value of property. In coal gas manufacture you have got to take into account the by-products, but not residuals. Residuals you have pretty much under your own control. By-products are a very important factor in reducing what would otherwise be the cost of making coal gas, but they are not so vital as some people think. I believe that a lot of our gas engineers if they analyzed the cost of obtaining cyanogen particularly would find that they are not making much money; may be improving the service a little. Coke is a residual. You cannot escape from it. A by-product is something you have to work up from a residual. By a residual, I mean an inevitable result—a concomitant of the generation of gas. By "by-product" I mean something which as a result of some special and further effort may be incidentally realized. The matter of residuals such as coke was under the company's control. That is because whatever coke is produced in the production of coal gas is used as a fuel in the production of water gas and coal gas. In other words the coke which is a residual in the production of coal gas is used as a part of the production of other gas. As between the two gases, it [fol. 2839] would make the costs high or low, as to coal gas or water gas. For example, if you credit your coal gas production with a high price of coke, you increase the cost of your water gas accordingly, or vice versa, and bring down your cost of coal gas on paper.

By the Master:

I took the cost that the company was charging itself and crediting itself with coke as a residual.

By Mr. Ransom:

I checked up against the cost the company was paying for coke that it purchased and the reasonable selling price of coke in this district, and also the handling charges if it was going to sell it, and then adopted its method of figuring.

The company ought to have both coal gas and water gas capacity, so that the operating engineers could, to some extent, make more of one kind of gas or more of the other relatively, according as not only the cost but the availability of labor and materials used in the particular products warranted. At times it becomes a matter even of ability to obtain coal or oil or labor, especially labor. Additional plant capacity on each, coal and water gas, should be available in order to provide that flexibility and economy. It is the only way to make gas economically. And the maintaining of that additional investment is the only way to run any business. But, of course, this additional property or this additional plant capacity would undoubtedly be required and entitled to receive a return on its present value all the while, whatever it might be, but I think the economies, on the other hand more than off-set it.

[fol. 2840] My basis here is taking all of this manufacturing capacity over to Astoria and putting coal gas and water gas in the same ratio in which they are now in the Astoria plant capacity. That is not the ratio which prevails in the Consolidated Company as a whole, taking into account both the Manhattan and the Astoria plants. I have worked out a separate companion table in my testimony, which was spread on the record, to give effect to that; that is, bringing it down to about 16 per cent, I think it is, of coal gas on the system. If you adopted a plan of making all the gas, coal and water gas, in the ratio in which coal and water gas capacity are now available at Astoria, you would have to have additional water gas capacity at Astoria to the extent that you had discontinued capacity in Manhattan.

Sheet 14, which is my final sheet, is based on the idea of making all the gas or using the ratio as to coal and water gas which now prevails in the Astoria plant, and not the

ratio which now prevails in the Consolidated as a whole, taking into account the Manhattan plants and Astoria. So that my final estimate here on sheet 14, is based on an increase in the percentage of water gas capacity, because you would have to take up at Astoria the water gas that you would be out of in Manhattan, if you left out the three Manhattan water gas plants. But in the Consolidated and Astoria at the present time, the ratio of coal gas and water gas appears on that exhibit. It is about thirty per cent coal gas made at Astoria. The total amount of gas deliv- [fol. 2841] ered to the system by all companies on the transfer system shows 84 per cent, almost, of water gas as compared with 16 per cent of coal gas. Taking only the Consolidated and Astoria, I have not worked out the figures for the Consolidated with respect to plant capacity. All the figures appear on Sheet 11 from which it could be worked out. The ratio of capacity between coal and water gas at Astoria at the present time is as twenty is to sixty-six—twenty of coal and sixty-six of water; but the actual make was about thirty per cent of coal and seventy per cent of water gas at Astoria in 1923, as shown on the table submitted.

If you were making coal gas in the proportion shown on page 14 of this table, you would have to add additional coal gas plant. There would be an additional ratio—you would have to add additional coal gas plant, and that would mean a larger capital investment per thousand cubic feet of gas sold, and the present value of that additional property would have to earn a fair return. And the return on that additional property would have to be taken into account as offsetting or as one of the factors in connection with any question of decrease in production cost as a result of transfers to Astoria.

Now, the greater the percentage of coal gas which you make and deliver the greater the amount of holder capacity you have to have, because it takes longer to get a coal gas plant into operation then it does a water gas plant. That is, where you have a coal gas plant and you want to be [fol. 2842] sure to get an uninterrupted supply of gas going to consumers, you have got to have at least equal to a day's output of coal gas alone. And that would naturally tend to increase the investment per thousand cubic feet of sales. If you had more holders you would have a greater capacity.

So that you would have to take into account the return on that additional amount of property as a possible factor in offsetting any decrease in production cost.

I have not studied the capacity of the mains connecting from the end of the Astoria tunnel down to Manhattan or from the 79th Street tunnel.

As to whether there are now transfer mains which would serve to bring from Hunts Point or from Astoria the quantity of gas now sold in lower Manhattan that is made at 11th Street and 21st Street, I have made no study of the capacity of those mains under the present pressure or under increased pressure to bring down the extra quantity of gas that would have to be brought down if the Manhattan water gas plants were shut down. If the existing transfer mains were not large enough to bring that quantity of gas down to that territory now served directly from the 21st and 11th Street plants, you would have to have the mains and the pumping machinery, and if they are not there now, you would have to have them. I am not saying they are there now or they are not, for I do not know. It is obvious that their present value would be a factor on which the rates would have to provide for a return. I do not know what it would cost to serve the territory of Manhattan by the 11th and *and* [fol. 2843] 21st Street plants without making a study of the requirements of the lower end of Manhattan by which I could arrive at the size of the main that would be needed, if any additional main is needed. Therefore I am unable to state whether I would be surprised to know that it would cost the amount of at least $6,000,000. There would be a considerable expenditure for mains, if anything like the present size of main was needed to bring down that additional capacity in the event of the 11th Street and 21st Street plants being discontinued.

If you were going to abandon and withdraw all of the plant and equipment of the 21st Street and 11th Street and 99th Street plants and make all of your gas at Astoria, eventually you would have to amortize the investment in the existing plants; that is, you would have to commence amortizing them at once in a certain ratio, so that eventually they would be amortized completely. Supposing that the engineers and the executives of this company were

considering whether it was advisable, whether it would be economical, to abandon the plants and the equipment that now make gas in Manhattan and to make all the gas instead at Astoria, or some other point, whether the savings would be enough to amortize over some suitable period the cost, the investment, in the existing plants would be one of the main things to consider in conjunction with whether or not you had in the past earned and set aside enough to amortize those plants. The reason why you would discontinue them now, if you were to do such a thing would be that economies would result, after [fol. 2844] taking into account both direct operating costs and return on present value of property. And other factors being equal, I would not retire them unless you could get enough economies out of the production in the new site to amortize the investment in the old, other things being equal.

By the Master:

What I meant when I said that one of the main things to be taken into consideration was the fact of whether they had in the past set aside anything towards armortizing the plants was, in the old days, they used to set aside all over the country certain amounts every year based upon the thousands of feet sold, or some other method, and sometimes on the percentage of the capital invested, to build up a reserve which would take care of any great amount of obsolescence or to take care of the writing off of plants which the executive thought should no longer be used. Now, if that has been done, there would not be so much consideration to be given to the cost of amortizing, because the company then would already have some of the money.

By Mr. Ransom:

The Consolidated Gas Company has not in the past five or six years set aside anything more than the requirement—with ups and down and slight amounts, sometimes in excess and sometimes below the actual requirements for retirements and renewals. I cannot go back further than December, 1923. At the end of 1923 there wasn't a dollar

in the reserve, but on the contrary there was a red ink figure. The only point I wanted to make sure of was that I am not attempting to say in any way whether the contingency fund represents depreciation or what it represents. I do not know, and I do not want to be giving a [fol. 2845] blanket approval or anything like that to that particular thing. I do not remember whether I did or not testify in the prior case that at least no charges had been made to the contingency fund since 1915. I have not seen anything on the books indicating any addition to the contingent fund during the period that I have examined the books, either in this case or the prior case. I have not made any figures or detailed estimates to show what difference in production cost there would have to be in the making of gas at Astoria in order to make economical the withdrawal of the plants on Manhattan Island. I have not gone into the matter in detail to find out whether according to the estimates of the engineers of the Consolidated Company any such new plants at Astoria or elsewhere would have to show an operating cost of 18 cents per thousand less than the operating cost of the Manhattan plants in order to place no burden on the company's consumers in the way of an increased price for gas as a result of the withdrawal of the Manhattan plants, but I should think that 18 cents would be quite high. I do not think that it would reach that figure, but, as I say, I have no actual figure to base my answer on. It would certainly be a substantial figure.

In making up my cost of gas at Astoria, I have included the operation of the four houses, namely, A and B houses, which are coal gas, and C and D houses, which are water gas. I know of no inclined retort house as big as the A house at Astoria in this country, and I do not know of [fol. 2846] any inclined retort house operating more efficiently in this country. In the early days there was a good deal of napthalene trouble, and other kinds, due to the disintegration of the gases passing along the heated surface of the retort. That has not been so prevalent recently because of the new system of charging which uses a heavier charge and thus leaves less exposed hot retort surface for the gases to pass over; but ordinarily you would have

more napthalene trouble from an inclined than you would have from a horizontal or from a coke oven. That is due in part to unevenness of charges. Of course, if it was uneven, it would leave a still greater surface of retort exposed to the gases.

Under the method of operation which favors the A house, it is more efficient and economical in its results than the B house. I think, however, the B house has some bad features to it which could be remedied with some expenditure.

By the Master:

In this plant, an inclined retort house is more economical in operation than a horizontal house. It ordinarily is not sufficiently so to be noticeable.

By Mr. Ransom:

Where you had an inclined retort house that was a part of a plant like Astoria, where you could favor your inclined retort house and give it the selection of coal and the selection of operating methods and give it the advantages and the break—under those conditions it is possible to do what the engineers of the Consolidated Company have done at Astoria, namely, get a better result in the A house. I think the management of the A house at Astoria could do just about as well as it is doing now even with some slight inferiority [fol. 2847] in coal. They have a splendid house there. It is one of the best inclined houses I ever saw and they are operating it very nicely and I think if they had changes in the fuel and they would change their methods, they would get just about as good results as they are getting now with the fondling and pampering.

By the Master:

If the A house was operated on the same basis as the B house is, I think they would do about as well on A as they are doing on A now, and I think if you gave B the cream of the milk, as you say you are doing today, you are to a great extent—I think the B house has some bad features that could be improved.

By Mr. Ransom:

If the B houses were treated as to coal and the like on the same basis as the A house, you would get somewhat better results in the B houses than you do now. That is, a part of the difference between the A house and the B house as they now stand is due to the fact that A gets the pick of the material and B takes the leavings. That does not account for all of it. But if each were treated alike, any existing difference would be much decreased; but in my judgment not entirely eliminated. I believe with some changes in the B house you could eliminate the increased cost over A. I realize at the present time that B house is called on in the regular course of business to use and does use the poorer mixture. Take that English coal that the company had to get. The B house used some coal that was not really suitable for A, but was suitable for B, and B could use those poorer mixtures and does use them because in the B house the charges are placed mechanically. I think [fol. 2848] the repairs on the mechanical apparatus would be more on the B than on the A, but the repairs to the firebrick would be higher on A than on B. Mechanical apparatus used to be pretty hard on the benches when you had those old charging machines. It is not so hard now; it is not much harder, I think, but it is some. The coke handling and the furnaces and the arrangement of the recuperators and the shape of the retorts and some of the coal-handling machinery could be improved in the B house.

The coke-handling machinery in B is about the same kind as in A, but it does not lend itself quite to the ease of handling on B that it does on A. I testified as to other features of the B house, such as the shape of the retorts—the furnaces particularly. The two-furnace systems are not good. I do not like it. I do not know that some of the benches in the B house are being operated with one furnace, or that they are not giving as good results as the two furnaces to a bench. I do know that I have taken two furnace benches and reconstructed them and improved the results very considerably. I am sorry if my judgment is in disagreement with that of the engineers of the company in respect to the two-furnaces-to-a-bench system, but I will stick to what I say.

In my statement with respect to the cost, I assumed similar operations to those for the year 1923, but have revised the production cost in certain respects as to coal, oil and repairs. Now, in respect of oil, I used .05351 per gallon. [fol. 2849] That is 5.35 cents. I used the same quantity the company used, with this price applied. I did not confine it to that particular twelve months ending April 30th of next year necessarily. That is purely a nominal year. I studied the oil contracts. I sought to reach what would be the actual price for oil to the company over the twelve months I have here set down as distinguished from the price during the year 1923. Some of the prices beginning October 1st, 1924, paid to the Standard Oil Company of New Jersey were even higher than 5.50 cents plus lighterage. And for the last three months of the year which I have assumed, I took it at 5.855 cents. That would be including transportation. I will read those details of my computation. I took 20,000,000 gallons at 4.25 cents. That is 4-¼ cents. I took 21,000,000 gallons at 5.105; I took 21,000,000 gallons at 5.355; I took 35,750,000 gallons at 5.605; I took 35,750,000 gallons at 5.855, all figures being cents per gallon. In other words, there was a total quantity assumed of 133,500,000 gallons costing $7,143,550 which, by computation, works out at 5.351 cents per gallon.

The figure as to the price of anthracite coal per ton I did not change from the price being paid and shown in plaintiff's exhibits. The figure I took per ton in my estimate as the reasonable price of bituminous boiler coal for this year ended April 30th, 1925, was exactly what you had paid in 1923. I took the coal for under the boilers at the company's actual price. For gas coal I change the price. The company changed the price, too. The weighted aver- [fol. 2850] age cost of coal under contract was $6.0996, which I call 6.10. I used 6.10 per ton in my estimate.

If the cost of oil and coal during this year were to be a higher figure, my estimate would be to that extent too low, and if it was lower, my cost would be too high, and vice versa. I had the company furnish me with a statement showing the names of the contractors for gas coal, bituminous gas coal, the quality and the size and the quantity, with the price alongside the docks. I obtained

from those contracts and those quantities and prices, a weighted average price for the year ended April 30th, 1925. I did not include the 200,000 tons of coal which the Company had on hand at the beginning of this year and which had been purchased at a higher price. It will not necessarily be used, and it would be better perhaps not to use it.

By the Master:

I did not include it. I figured out this morning, the bituminous coal on hand at the end of 1923, averaged including the cost of handling it into storage, which is a slightly different basis from the figure I have given of $6.10, that the cost of coal in stock was $7.592 per ton, and they had in stock about 238,818 net tons of 2,000 pounds. I did not figure what that would make the cost, adding their purchases for 1924 to that stock and taking the average cost, but I will be glad to do that. The correct basis would be to take the coal on hand at the end of April, 1924, which was about 200,000 gross tons, and then take into account the price at which it was carried on the books. The figure for coking coal as of December 31st, 1923 would be $6.3925, as distinguished from his figure of $6.10. I have handled the [fol. 2851] expense of handling separately in my exhibit. My $6.10 does not include the expense of handling into the company's plant, but my figure for the end of 1923 does include that.

By Mr. Ransom:

In my estimate of reasonable production cost for the year ended April 30th, 1925, I made no change in the price at which coke was credited to the coal-gas and charged to the water-gas. Now, with respect to ammonium sulphate and cyanogen, I used in my estimate the 1923 actual figures. I made no attempt to pass upon the actual current prices of ammonium sulphate and cyanogen at the present time and during this year ending April 30th, 1925, as distinguished from the 1923 price at all. I understand that the contracts you have are variable as to price, dependent upon the selling price of some comparable article. 1923 ammonium sulphate sold for 3.495 cents per pound, I believe. I will take that figure as correct, subject to verification. If at the

present time the company can not, during the year for which I have made my estimate, realize more than 2.612 cents per pound, that fact would increase the cost of coal-gas as estimated in my exhibit. Assuming the average price for cyanogen in 1923 was 18.86 cents per pound and the company cannot in this year, at the present time, get more than 12 cents for it, that would also increase the cost of coal-gas during the year for which I have made my reasonable estimate.

By the Master:

Those figures (prices) are not shown on my exhibit; just the total cost per thousand. They agree with the figures for 1923. Prices do not appear in that Exhibit.

By Mr. Ransom:

In other words, on my exhibit, where we find the same [fol. 2852] cost used as reasonable as was actually sustained by the company in 1923, I have naturally used the same prices and quantities. I have changed the unit price, but not the quantity. But I have slightly changed the quantities in the A and B houses with respect to coal. I have stated all the instances where I have changed quantities.

On my exhibit as to the operation of the D house at Astoria, I used whatever figure appeared on my 1923 costs as to anthracite coal at $8.620 per ton, which was the average price of anthracite coal in stock at Astoria purchased several years ago. If the present contract price is substantially above that, my figure should be revised accordingly. The present price of anthracite is $10.75987 per ton. That is alongside whichever plant these different contractors are to deliver it to, that is my understanding. That figure which I have just given is the figure which is called alongside in harbor limits but does not include Astoria. I think these contracts were made principally for the Manhattan plants, because you normally would not use much anthracite at Astoria. And the present contract price of anthracite alongside at Astoria is about $10.82677 per ton. It would be higher than the figure which I have given as alongside at the Manhattan plants, because it is outside the

harbor limits. I really don't believe there is any need to use anthracite at Astoria, considering that you make your own generator fuel there. My understanding would be—you didn't use any on C House, and what you used on B House was occasioned from coal strikes and inability to get coal in order to make sufficient coke.

[fol. 2853] In my exhibit as to the D House I showed the use of anthracite coal at $8.62 per ton. That would be more consistent to increase the cost of anthracite coal for the D plant so as to use the present contract price.

On my exhibit it shows that my costs are predicated on the thermal quality of gas as actually furnished during 1923. From the viewpoint of producing a gas at the plant of not less than 650 B. t. u. per cubic foot, I testified it could not be done with any additional quantity of gas oil. It could not be done with any less additional quantity of gas oil than 1.1 gallons, as testified by Mr. Woods, in fact it would take a little more. My estimates in the Kings County Lighting Company case are substantially more.

By the Master:

I figure as the thermal content of the gas produced at Astoria plant in 1923, about 590. I figured no more than 670 at the most would have to be made at the plant to test about 650 B. t. u's.

By Mr. Ransom:

That is in the Kings County Lighting Company case where I gave figures of the additional use of 2 gallons of oil, I predicated my estimate there on the basis of using not lessthan 650 B. t. u.'s a mile from the plant. It would take at least that additional quantity of gas oil to produce 650 B. t. u. gas to test a mile from the plant, with some slight reduction in the amount of generator coal; not serious in amount, however.

On Sheet 8 I started out with the actual amount of gas used at the plaintiff's works and stations, namely, 13,867,500 [fol. 2854] cubic feet, and all the rest of my figures there are the actual ones of the company, with the exception that from the 13,000,000 plus I first deduct "Amount used at works (estimated)." My reason for adopting a method of

first deducting from the amount actually used at the plaintiff's works and stations 10,000,000 out of 13,000,000 actually used, should be more correctly expressed as used at the Manhattan works which are assumed not to be operating. I believe, however, that I would like to change that a little, because to some extent at least there would be more gas used at the Astoria works to take the place of the gas which I estimated would not be used at the Manhattan works. In 1923 there was used by them at the Manhattan plants, including 11th Street, 14th Street, 21st Street, 42nd Street and 99th Street, and all other stations (that includes the pumping stations) 13,867,500 cubic feet. There was used at all plaintiff's plants and stations during the year 1923 that amount. At the Astoria plant with a working capacity of 86,000,000, they used 11,618,900 cubic feet in addition. At the time I made up this table it was my intention to figure distribution costs as well as holder costs. This table really has no effect whatever on my calculations, and might well be ignored. I would not regard 13,867,500 cubic feet as a reasonable estimate of the amount of gas to be used at the plants, works and stations if all of the gas were made at Astoria. I think at least some part of that 10,000,000 that I deleted should be added onto the 11,618,900; at least half of it, I would say.

[fol. 2855] New York, July 24, 1924.

Met pursuant to adjournment.

A. S. B. Little, a witness in behalf of the defendants, resumed the stand.

Cross-examination continued by Mr. Ransom:

At the close of my cross examination at yesterday's session, at page 9992 of the mimeographed record, by way of explanation of the inclusion of the material shown on Sheet 8 of my exhibit, I said that at the time I made up this table it was my intention to figure distribution costs as well as holder costs, and that "this table really has no effect whatever on my calculations and might well be ignored." By that I mean, that the matter which appears on page 8 of

my study does not in any way enter into or affect any of the subsequent figures which I reach as to reasonable cost. At the time I made up the material that is on Sheet 8 I had contemplated that this study would include distribution and other expenses, as well as production cost. When I made up this study in its earlier portions it was designed as a study of Burner cost as well as production cost. Sheet 1 of this exhibit was entitled "Estimate of Reasonable Operating Cost." In making my study of reasonable operating cost, I examined the exhibits that have been placed in evidence here by Mr. Teele as to production and distribution of gas for the years 1922 and 1923 with not much attention to taxes, and I also examined the exhibits put in by Mr. Nickerson as to the cost of production and distribution of gas. I looked at the exhibits and the record in connection with said exhibits.

Referring to Defendants' Exhibit 95, in which I have undertaken to show in a graphic or charted form a comparison of the holder cost of water gas at the Astoria plant and at the plants of the Consolidated Company during 1922 and [fol. 2856] 1923 and early in 1924, I said on my direct examination or in connection with it that the Astoria cost of water-gas shown on Exhibit 95 did not include the items corresponding to the gas storage expense of the plants at outlying stations in Manhattan. There is no outside holder station cost attaching to the Astoria figures and lines on the chart. In the Astoria cost may be an item of .02 of a cent in connection with the holders at the Astoria plant. I do not carry the figure in my head. It is about that. It is a negligible figure, and in your holder cost of water gas at the Manhattan plants I have included all of the items which, under the Uniform System of Accounts, are charged to Gas Storage, amounting in the case of the Manhattan plants to 2.73 cents per thousand cubic feet in the year 1923. After I gave that testimony I went back and prepared another chart from more information, showing that the amount of the top line on this exhibit would be brought down by excluding the holder costs of the outside holder stations applicable to the Manhattan plants. If the quantity were increased, the number of cubic feet by which I divided the dollars of expense in connection with the Astoria holder would increase the dollars and decrease the expense to some extent. The same process of decreasing the amount

of gas made in Manhattan would increase the unit cost in cents per M cubic feet of the gas storage expenses at outlying stations in Manhattan. In this exhibit in which I purport to compare the holder cost of water gas in Manhattan plants, with the holder cost of water gas in the Astoria plant, the upper line, the "Holder Cost, Water Gas, in Manhattan," which undertakes to show the holder cost of water gas in Manhattan, includes the cost of maintaining the holders in connection with the 14th Street and 42nd Street coal gas plants in Manhattan where no coal gas was [fol. 2857] made, as well as the expenses of heating water-gas at the 11th Street, 21st Street and 29th Street plants, and also coal-gas storage expense at outlying stations in Manhattan. It includes all the costs reported on your books for maintaining the 14th and 42nd Street plants for the year 1922 and ten months of 1923. So that what this chart, Exhibit No. 95, really is at most is a comparison between the water-gas cost in Astoria and the cost of operating and maintaining all of the plants of the Consolidated in Manhattan. Those figures are taken from the books and records. In other words, the upper line in that exhibit does not represent a true or exclusively water gas cost in Manhattan; it includes the storage cost and the Manhattan cost, too.

I have regarded as a proper part of the cost of making water gas in Manhattan the cost of maintaining the coal gas plants at 14th and 42nd Streets as standby plants, to the extent of the figures appearing on the company's books. In other words, I took the figures from which this upper line was charted from the "book form" reports, and in the book form reports I found the cost of gas at each station shown and then the cost of gas summarized in a column headed "All Consolidated plants," and my upper line which I have charted, labeling it "Holder Cost of Water Gas, Consolidated Gas Company," really is the cost of gas at all Consolidated plants including the cost of maintaining those two standby plants to the extent that there was such maintenance as shown on your books.

By the Master:

The line shows the water gas of the Manhattan plants ready to go into the distribution mains; after it has gone

into the mains, too, to get into the distributing stations; that is, the holder distributing stations, because I have included the cost of said outlying distributing holders. It is ready to go from the distributing holders into the dis-[fol. 2858] tributing mains. In the case of the Astoria plants there would hardly be the cost of the delivery of the gas from the storage holders at Astoria to the distributing holders in Manhattan before they would be on an equivalent basis as to use, because I have not included in there any pumping costs. There is no cost of distributing that gas to the outside holder stations, but there is the cost of maintaining the holder station outside of the Manhattan manufacturing capacity. There might be a little extra cost to get the gas over from Astoria to Manhattan. It would not be large. In figuring the cost of the gas to the company finally, you would have to include the cost applicable to the tunnels. My chart is not attempting to show that at all.

By Mr. Ransom:

I have included in the figures which are shown in the upper line all of the expense of the outlying holder stations in Manhattan. Those holder stations in Manhattan, including the governor houses, distribute gas made at the subsidiaries and they distribute gas used by the subsidiaries. In other words, those pumping stations and governor houses and holders located at the various points in Manhattan are used for distributing and pumping and delivering the gas which is made in the Manhattan plants of the Consolidated and also the gas, both coal gas and water gas, which is made at Astoria, and also any gas which is purchased from other companies. You have in the upper line, on the exhibit, expenses which are incurred as a part of the cost of delivering to consumers the gas which is shown in the lower line. There are other costs, that are incurred in the distribution of the gas, which come under another head-[fol. 2859] ing not as holder costs at all. The element of gas storage expense which I have included in the upper line on my chart. Defendants' Exhibit No. 95, is the storage expense incident to the delivery to the consumers of the whole system gas. So far as the figures for gas storage expense included in my upper line are concerned, those are only what is shown on the Consolidated books, distributed

to the subsidiaries in proportion to the use of the facilities. I understand the full cost is shown in the reports in the monthly book reports, but later when you make your charge, some of the gas would come out of this line, as to the Manhattan plants. My understanding is that the gas storage expense which is included in the upper line and which undertakes to represent "Holder Cost, Water Gas" at the Consolidated plants, covers the gas storage expense not merely for twenty-four billion cubic feet but for the entire output of the system. The adjustment is made afterwards; but at least it does cover the gas storage expense in connection with the entire twenty-four billion cubic feet of Consolidated. I have put that cost as to twenty-four billion cubic feet of gas in, in connection with the cost of making gas at these Manhattan plants which have a capacity of only a small part of twenty-four billion cubic feet. The Manhattan plants have not available at the plants sufficient storage for the gas that they make, whereas the Astoria plant has. If the Astoria plant had no outside holders at all, it would be able to function, whereas the Manhattan plants need these outside holders in order to take care of the gas that they make. In the figure which I have given here in the upper line as the holder cost of water-gas in Manhattan, I have included all of the miscellaneous works expense both at the Manhattan plants as holder cost of water-gas in Manhattan and the miscellaneous works expenses in connection with water-gas manufactured at Astoria. Whatever the books show, I have included.

[fol. 2860] In Manhattan, with respect to dock properties, there is included in production expenses the rentals of dock properties. That expense is in the figure on the chart, whereas at Astoria and in connection with Astoria water gas, there is no such charge to be included, because there the property is owned and consequently is dealt with not as a payment of a rental, but as a matter of a return on the present value of the property used, that is one of the advantages at Astoria. Of course, that that is obvious, it is an advantage which produces a difference in operating expenses, but not necessarily an advantage when you take into account both operating expenses and return on present value of property. You have to take in everything in the cost of manufacture; for example, if the city charged 8 per

cent on the present value of the dock property in Manhattan, the two things would be exactly in the same position; it is rental in one case and return on capital in the other, the two will go together, but your Manhattan water gas cost includes rental, and your Astoria water gas cost does not include either rental or return on present value of property.

In my statement of my qualifications, referring to my work for the Illinois Commission, I referred to various cases in which I testified before the Illinois Commission, and I referred to various cases in which I aided the Commission in the preparation of opinions and orders, and various cases in which I had responsibility for or relation to the valuation of utility property and made recommendations to the Commission and reports to the Commission with respect to value. When I testified in this case and also in [fol. 2861] the New York and Queens Gas Company case before this Special Master that going value should be taken into account, I had in mind what I had done in those cases in Illinois, among other things and what the courts have done, too. I have not recommended allowances for going value of fifteen to twenty per cent. I did not recommend an allowance of more than ten per cent for going value in the Central Illinois Light Company case. I did recommend an allowance of ten per cent—not ten per cent on the reproduction cost. It was more than the original cost; it was the fair value found by the Commission. Well, by "fair value" I don't mean original cost. I mean what a reasonably minded man would say was the fair value, after taking into consideration all elements of cost. I don't think going value is to be computed on a percentage basis at all. I would say it was a matter of judgment on the facts in a particular case, and that what it amounts to or what it might amount to in percentage was an incidental matter, that is used as a check up on your calculations. You have got to have a lot more than judgment. You have to have something to base your judgment on, as to what the amount of going value is on all pertinent facts. Each case differs from another. I would not and have not from experience taken it as a matter of percentage on present value in the first instance. The matter of the use of a percentage is a method of checking your judgment after it has been arrived at.

With respect to Exhibits 101 and 102, concerning com-

posite pig iron and certain types of galvanized sheets, I started with May 1923, and take in the whole month of May 1923, which was the date of the passage of the statute and [fol. 2862] the pricing date of the appraisals put in by the plaintiff's witnesses. I have not shown how any of these prices with respect to pig iron or galvanized sheets relate to the prices before the war or compare with 1917 prices. It is common knowledge that these prices which I have shown are, of course, very much higher than the pre-war prices, and higher than the 1917 prices in some cases. Those may or may not be higher, because the big jump came around July 1917. None of these items which I have shown on Exhibits 101 and 102 are really in evidence yet.

By the Master:

The trade journal showed prices and quotations recognized and accepted among the trade.

By Mr. Donnelly:

I have produced the data underlying Defendants' Exhibits 101 and 102 for Identification, that is the American Metal Market Monthly Review Section, Daily Iron and Steel Report, the issue of Friday, July 11, 1924, being the last one that was available to me, and that is a trade paper that circulates among those in the business. That shows the prices from month to month for the previous year, which I understand constitutes the basis of Defendants' Exhibits 101 and 102 for identification offered in evidence.

(Defendants' Exhibits 101 and 102 for identification were received in evidence, and marked Exhibits 101 and 102, respectively; and pages 25 and 26 of the Monthly Review was received in evidence and marked Defendants' Exhibit 112.)

By Mr. Ransom:

With respect to Defendants' Exhibits 101 and 102, these relate to materials which enter into the cost of producing or distributing gas, only to a slight extent. They might come into the repair items, but practically to no extent. In these two exhibits with respect to galvanized sheets, bars, plates and shapes, and with respect to the average daily quotation on composite pig iron there is a tendency to be a

little lower in 1924 than in 1922 and 1923. I really don't [fol. 2863] know that there are many or some other articles which enter into the cost of construction, which are higher in 1924 than they were in the period covered by my chart. Figures which I have given on Defendants' Exhibit 101 as to galvanized sheets are for the whole country. All of the steel is f. o. b. Pittsburgh. As to the pig iron prices, I have given a figure for the whole United States, based upon certain points of manufacture and distribution, I mean various locations like Chicago, Cincinnati, Cleveland, Buffalo, Philadelphia, Bessemer, and so forth. I do not mean by these two Exhibits to convey any opinion that the rates of pay of labor in the gas business, either construction or operation, will go down in 1924. There is nothing there about labor in the gas business in 1924. As to 1925, I don't know; nobody knows. I am not conveying the impression that the pay of labor entering into the cost of gas making material will go down in 1924 or 1925; that has nothing to do with these charts.

By the Master:

These charts have nothing to do with gas making. They are merely in connection with the cost to reproduce the property. It shows a tendency toward a lower price than was used; I mean only the cost of materials that would be used in construction.

By Mr. Ransom:

The building costs in 1924 are lower than they were in 1923. I know that the cost of labor in building is higher in 1924 than it was in 1923, theoretically. The rates of pay are substantially higher; that is, on paper they are. But there isn't very much being done and the man will take less money than is quoted as the ruling price. Well, labor costs and materials enter into the cost of materials. In manufactured materials the labor cost is a very large element. You cannot expect substantial decrease in the cost of materials until you have a decrease in the cost of labor.

By the Master:

I have found varying costs at various plants of the Consolidated Gas Company and the Astoria Light, Heat &

[fol. 2864] Power Company on production. That is a usual condition in the production of gas by companies having plants situated in different points. That would be the cost, even if plants were located substantially in the same place. It is frequently a matter practically uniform in cases where they have more than one plant. Where they have made the same amount per month you would find substantially the same cost, but if the amount varied, the price per thousand feet would vary. I understand that the usual process in companies having a number of plants, that what they produce would vary from time to time. It is usual that there may be portions of the plant out of operation for repairs or other conditions, so that the production would vary. You can make your repairs usually when the demand on the plant is low. Of course, you would not make all of your repairs in the same month.

It would not be possible, with a plant such as the Consolidated Gas Company or the Brooklyn Union Gas Company where the gas is let out by the plants, that you could determine the cost to distribute gas at any one point. You would have to determine the distribution cost of coal for instance. I have been connected with companies that have supervised companies either in a personal capacity or as a representative of the Commission or otherwise, where the gas was made and purchased at various points and conditions throughout a given distribution system. In every case before the Commission, when I was called upon to give assistance to Commissioners, I invariably took into account the reasonable cost to produce. Of course, some considera-[fol. 2865] tion was always given as to whether or not there was extravagance. Sometimes it was the reasonable cost of production at one plant and sometimes the reasonable cost of production of the entire plants of the company, dependent upon how bad the plants were. If they were so bad that they could be condemned, we would ignore them. Assuming that the plants were efficiently operated and under normal conditions, the cost of manufacture and distribution of gas was taken from all the plants or from a single plant according to the conditions found in each locality. In the People's Gas case, a condition was actually disclosed of what the Commission decided was poor management. When the War was raging and the People's Gas Company was practically out, the Commission instructed

me to figure a rate that would let them live and give service, whether they were badly managed or not and then the company was told that it would have to get on a proper basis. If you are attempting to make a reasonable rate that will provide not only a return but a fair and reasonable return, the problem would be entirely different. In other words, my view is that, in testing whether a rate is confiscatory, it is determinable upon the cost of operation of the most efficient plant plus the distribution of the gas on the whole system.

By Mr. Ransom:

I made a study and anlysis of the prices paid by the Consolidated Gas Company for materials during 1922 and 1923, and did not find any extravagance or waste arising from those prices. In the course of my duties for the defendant, Attorney-General, the record shows I had conver-[fol. 2866] sation with Colonel Miller and afterwards permission was withdrawn and I examined the exhibits which were put in by Colonel Miller and Mr. Burt, relative to the cost of reproducing the structures and apparatus of the Consolidated Gas Company and the Astoria Light, Heat & Power Company, and their unit prices, and I went over the unit prices with Mr. Burt primarily and Colonel Miller indirectly, because he informed me he had the unit prices—that is, I checked his unit prices, which he made on gas properties in 1922, confining it to structural costs and unit prices of labor and material. I examined Mr. Wood's report fairly carefully. I did not have time to go thoroughly into Mr. Addicke's more voluminous exhibits.

Redirect by Mr. Donnelly:

It is not the importance of the variety in location alone that constitutes the difference in the manufacturing cost of gas. There are factors other than location that enter into the explanation for differences in manufacturing cost at the respective plants. Based upon the experience set forth in my qualifications, the consumers of gas will get satisfactory service if they are furnished with a gas averaging 537 B. t. u.'s per cubic foot with a minimum of 525 B. t. u.'s per cubic foot. It is my judgment the consumers would get at least as good value per dollar paid from the 537 B. t. u.

content average as they would from the 650 B. t. u. value. You could make more gas at the lower quality gas, and, therefore, it would seem that the capital would be lower than for the higher B. T. U. gas.

[fol. 2867] New York, July 25, 1924.

Met pursuant to adjournment.

HENRY M. BRUNDAGE, a witnesss for the plaintiff, was recalled.

Further cross-examination by Mr. Donnelly:

I am able to state, beginning January 1, 1923, what are the annual salaries of the general officers of the Consolidated Gas Company. During the year 1922 salaries paid to our general officers aggregated $163,316.49. For the calendar year ended December 31, 1923, the aggregate was $187,024.84. The general officers those amounts included were the president, the vice-presidents, secretaries, treasurers, auditors, comptroller and two registrars of preferred stock. It included the salaries of the president, Mr. Cortelyou; the vice-president, Mr. Addicks, another vice-president, Mr. Thomas; the secretary, Mr. Brundage, myself; the assistant secretary Mr. Barnitz; another assistant secretary, Frank H. Nickerson; another assistant secretary, H. C. Davidson; still another assistant secretary, C. M. Carbonell; the treasurer, Benjamin Whitely; assistant treasurer, John R. Fenniman; assistant treasurer, Walter C. Phelps; assistant secretary, Malcolm M. Graham; auditor, Frank L. Lambrecht; assistant auditor, William R. Schoenfish; comptroller, Mr. Frank J. Bischof; and also, speaking of 1922, the late Mr. Robert A. Carter, and the two registrars of preferred stock, M. M. Graham and C. G. Kingsbury. They served through a portion of the year from April, 1923, to December 31, 1923. In those aggregate amounts for the two respective years there is not included the salary of Mr. George E. Woods, the Chief Engineer of the Consolidated Gas Company. I do not know Mr. Woods' [fol. 2868] salary since January 1, 1922, for the calendar years 1922 and 1923, respectively, but it can be computed.

The annual salary paid to Mr. Woods since the 1st of January, 1922, is in a book of the plaintiff company that is in evidence; all the salaries are in evidence in the books. That is charged in the Operating Ledger, which shows the same information with regard to the annual salary paid since January 1, 1922, to Mr. C. C. Simpson.

By Mr. Ranson:

In the case of the officers, for example, you will find the aggregate salaries paid the officers charged in the accounts, but you would not find the details in the books. You would have to go to the pay rolls.

By Mr. Donnelly:

These pay rolls have not been offered in evidence. You would have to go to the general office monthly pay rolls to get the annual salaries paid to Mr. Woods and Mr. Simpson. If the Court so directs, I will let one of counsel's representatives look at that for the purpose of getting that information.

Redirect examination by Mr. Ransom:

Some of the people on the general Officers' pay roll do perform services for affiliated companies. They are paid for such services by such companies. These aggregates which I have given relate to such payments as are made to those persons by the Consolidated Company only, for services rendered to that company. For example the treas-
[fol. 2869] urer performs certain services for other companies, and he is paid for those services by the other companies. He performs certain services and gives a part of his time to the Consolidated Gas Company, and he is paid for that by the Consolidated; included in the amounts I read. He has an assistant who gives all of his time to the services of the Consolidated Company. That assistant is paid entirely by the Consolidated.

Recross-examination by Mr. Donnelly:

The treasurer and secretary of the Consolidated perform services for companies other than the Consolidated, but not the president. Whatever he may do for the other

companies is not within my knowledge. Our treasurer performs some duties for the Astoria Company and for the Standard Gas Light Company and for the United Electric Light & Power Company. The secretary performs some duties for the Astoria Company. I have enumerated all. I am not sure whether I covered on any prior occasion the detailed services performed for those companies by the treasurer, but he is also an assistant treasurer of the Astoria Company and does some work for them. I am sure I did as to my own services. Those officers I mentioned are the only officers of the Consolidated Gas Company who perform services for companies other than the Consolidated. I did not mention Mr. Thomas. He may perform some services for the Queens Electric, but very little for the Bronx Gas & Electric Company. I do not [fol. 2870] know that Mr. Thomas is consulted frequently about gas main extensions for companies other than the Consolidated but affiliated with the Consolidated Company. I do not believe that he is. I do not know of my own personal knowledge. The services performed for companies other than the Consolidated by those officers of the Consolidated and paid for by the other companies to those officers are recorded in the vouchers and records of the company that paid the money. Take the question of the Astoria Company. I am an officer of that company. I give them a lot of time. I am included on their monthly general office payroll. I have no knowledge of Mr. Addicks' doing anything for any of the other companies. I have no definite knowledge one way or the other on the subject.

Redirect by Mr. Ransom:

Mr. Thomas is a director of the New York and Queens Electric Light & Power Company; chairman of the Board of the New York and Queens Electric Light and Power Company and a director of the Bronx Gas and Electric Company. As director of each of those companies he receives director's fees. I do not know whether he gets any other compensation from those companies or not. The treasurer performs services for other companies and gives [fol. 2871] a part of his time and is paid by other companies and I give a part of my time in doing work for other com-

panies. As to whether any of these officers perform services which are for other companies rather than for the Consolidated, I have no knowledge what time they spend, if any.

By Mr. Donnelly:

Mr. Thomas was not a director of the New York Mutual Gas Light Company before it was taken over by the Consolidated Gas Light Company. He held no position with that company prior to the time it was taken over by the Consolidated. He had no*t* connection with it whatever.

[fol. 2872] MARTIN MOHALE, a witness in behalf of the defendants, recalled.

Further direct examination by Mr. Donnelly:

Assuming for the purpose of this case that the plaintiff company owned all of the land shown on the diagram Plaintiff's Exhibit 258 included within Block 369, Lot 1, 10, 11, 12, 13, and 14, as shown on that exhibit, the fair market value of that land as of June 1, 1923, is $566,457. The property comprises the block between Avenue D, 12th and 13th Streets, and the East River; also bulkhead at the foot of 13th Street and bulkhead line; also small pier. I have taken two corner lots, one on the corner of Avenue D, at $8,000 each, plus 30 per cent for plottage, $20,800. I have taken six inside lots at $8,000 apiece, $48,000 on Avenue D. I have then taken on 12th Street, 153 feet, which equals 6.12 city lots, at the rate of $7,500 a lot, would be $45,900. The same number of lineal feet on 13th Street, containing 6.12 city lots, would be $45,900. The balance of the block, having a bulkhead on the East River on the north side of the plot, equals 50,910 square feet at $4 per square foot would be $203,640. Land under the pier—dimensions of the pier are 39 feet by 213, or 8,307 square feet, at $3 a foot, would be $24,921. 629 lineal feet of bulkhead, which includes the foot of Tompkins Street and also the north side of the block of $200 per lineal foot, $125,800, or a total of $514,961, to which I have added plottage of 10 per cent [fol. 2873] amounting to $51,496, making a grand total of

the property of $566,457. That is not the same method that I used in the testimony that I have given heretofore.

Referring to Block No. 1089, my valuation as given heretofore did not include anything for what is known as the bed of Twelfth Avenue. Upon the assumption that the plaintiff company owns that part of that block in which is included the bed of Twelfth Avenue, the fair market value of the land included in the bed of Twelfth Avenue as of June 1, 1923, would be $118,500. In other words, there are 19,750 square feet at $6 a foot, that would be $118,500, in addition to what I testified before, making a grand total of $1,181,100.

Cross-examination by Mr. Ransom:

With respect to the computation in the figures which I gave for the value of the land at the Mutual plant with Lot 14 included, those were not the same figures and details that I had in my working papers when I was on the stand before. You may see these (handing papers to counsel for the plaintiff). The figures on this paper which I handed to counsel for the plaintiff are the same figures that were read into the record by me as a part of my testimony, just now.

(Papers received in evidence and marked Plaintiff's Exhibit No. 991.)

The assessed value of Lot 14 of Block 369 for the year 1924 is $409,000, and by Lot 14 is meant the designation of [fol. 2874] that property on the tax maps of the City — New York, east of the established bulkhead line of Tompkins Street. With respect to the property at the foot of 42nd Street, I didn't have any figures as to the bed of Twelfth Avenue in my original figures. The figures that I have given today are absolutely new. They are in addition to the figures that I have already furnished.

With respect to Block 369, Lots 1, 10, 11, 12, 13 and 14, the figures given here today are higher than the figures which I gave when I was on the stand before. My computation with respect to the property at the foot of 42nd Street multiplied by 6, would give the total amount. The factor which I applied to the square foot area is $6.

[fol. 2875] JOHN J. BOYLAN, a witness for the defendants, recalled.

Further direct examination by Mr. Donnelly:

I have appraised the entire plot, Block 369, embracing Lots Nos. 1, 10, 11, 12, 13 and 14, at $573,409. It is made up as follows: I took two lots, being quarter lots on Avenue D, which I valued at the rate of $8,000 a lot plus forty per cent for corners, which amounted to $27,120. I then took six inside lots on Avenue D at $8,000 a lot, amounting to $48,000. I then took 153 feet on Twelfth Street equalling 6.12 lots at $7,500 a lot, which amounts to $42,900. I then took 153 feet on 13th Street, equalling 6.12 lots at $7,500 per lot, which amounts to $42,900. Then I took the balance of the plot having a bulkhead on the East River, and on the north side of the plot, dimensions 181.5 and 280.5, containing 50,910 square feet. I value that at the rate of $4 a square foot—this amounted to $203,640. The land under water, being under a small pier 39 by 213 or 8,307 square feet, I valued at the rate of $3 a square foot, which amounted to $24,921. Then there being 629 lineal feet of bulkhead, I valued that at the rate of $200 a lineal foot. This amounted to $125,000, making a total of $521,280. To this amount I added plottage of 10 per cent amounting to $52,128, making a grand total of $573,409.

By Mr. Ransom:

I added 10 per cent for plottage; for corners, 8,307 square feet at $3 a square foot for the Avenue D corners. I added 40 per cent for the corners.

[fol. 2876] By Mr. Donnelly:

I valued the land embraced within the bed of 12th Avenue at $118,560. To the sum previously testifi- to by me for this block, being $1,276,456.36, I have added this sum of $118,560, making a grand total for this block of $1,395,016.36.

Cross-examination by Mr. Ransom:

These figures that I have just given today with respect to the property at the Mutual plant are the same as I had

in my working papers when I was here the other day. You may see them (handing papers to counsel).

Redirect examination by Mr. Donnelly:

The figures that I have just given here are not the same as I gave heretofore. I added to my figures today $118,560, for the value of the bed of 12th Avenue, assuming the plaintiff owns the property there.

Recross-examination by Mr. Ransom:

When you asked me about my working papers, I understood you meant these new papers, which I show you, and that is what I understood to be the purport of counsel's question. I have included these as part of my working papers which have heretofore been marked as an exhibit inasmuch as they are based on a new theory. I had a valuation in my working papers when I was here on the stand the other day for all of the property in Block 369, under another theory, not this exact theory. This theory is the theory that was followed by the company's expert, and I [fol. 2877] understood that the Master wanted this testimony along the same lines. The theory was then under the assumption that the Consolidated Gas Company did not own any land easterly of the westerly side of Tompkins Street. I did not have a sheet which covered all of it, the same property I have for $573,409. I did not have a valuation which included Lot 14.

[fol. 2878] Jesse B. Sxow, a witness for the defendants, recalled.

Cross-examination continued by Mr. Ransom:

With respect to Exhibit No. 78, referring to the concrete in the bulkheads, I did not assume that Mr. Davies had included the concrete for the bulkheads in his items 7 and 8 which are respectively, "Concrete in tunnel, sound ground" and "Concrete in tunnel, bad ground." I assumed that those items contained the amount of work done in the finished structure. I adopted his amount of concrete as shown on his exhibit, Exhibit No. 836, but I did not assume

that that included the concrete for any bulkheads, but did assume that the concrete required for temporary work would be included in the price of the completed structure. In other words, that his price of $32 and $36 a yard would include the cost of placing any bulkheads. That is, in his unit prices I have assumed that he would charge up any temporary work it was necessary to do to build the tunnel. I assumed the cost of the concrete should be in these items 7 and 8. That is, I assumed that Mr. Davies, as a tunnel engineer, in making up his items 7 and 8 did not include the quantities of the concrete for bulkheads in the quantities of concrete which he gave for items 7 and 8. That is, I assumed that where he gave the cubic yards of concrete required he did not include the concrete for the bulkheads, and that he did include the cost of the concrete in all of his [fol. 2879] unit prices. It might not be included in just the concrete prices, it might be included in the excavation prices. I assumed that the cost of concrete for bulkheads was included by Mr. Davies not necessarily in his cost of concrete; it might be included in his cost of excavation, the cost of cast iron and any of his unit prices. The natural place to put the cost of the concrete for the bulkhead is in any unit prices on any kind of work. That is what I assumed. With respect to the unit prices on items Nos. 7 and 8 and the amounts of money there estimated for items Nos. 7 and 8, I assumed that they were high enough to cover the cost of the concrete for the bulkhead.

By the Master:

I mean that, whatever temporary work there might be done, would be taken care of by increasing the unit prices for the kind of work indicated. That is, if it was temporary work of any nature whatsoever, that any of his unit prices might be increased sufficiently to take care of it, if there was temporary concrete work to be taken care of that he might include cost of the temporary concreting in the pipe prices. In other words, temporary bulkheads and temporary work under City contracts is not paid for. Now, the unit price that a bidder submits in making a proposal is supposed to include the cost of doing the temporary work. [fol. 2880] For instance, he has to buy a compressor, he puts the cost of that compressor in some of his unit prices,

or all of them. I do not mean he would put temporary iron work under units for iron or pipe, but temporary concreting under the units for concreting, and the entire cost of all the temporary work, of whatever character, would be taken care of by increasing the sum of all the various unit prices for material on the job.

By Mr. Ransom:

So, if we found that it was going to take 4,000 cubic yards of concrete, that would be what I call permanent installation, and 5,000 yards of concrete for temporary work on the bed grant. The way of making up the inventory and appraisal would be to show the 4,000 yards of concrete and not show the 5,000 at all, except to apply to the 4,000 yards of concrete the unit prices which would cover the cost of the 9,000 yards, if concrete is the only item used. In my estimate I've taken care of any temporary work I thought was necessary in my unit prices. I took care of, in my unit prices on No. 7 and 8, the cost of the concrete bulkheads. There are some bulkheads. All the concrete bulkheads that we would build I included in our unit prices. We did not include the quantities of concrete for such bulkheads that we would build. We did not include quantities in our quantities for items Nos. 7 and 8. In building the tunnel that I have estimated on I have assumed that I would use $12,750 worth of concrete bulkheads. With possibly [fol. 2881] some addition- concrete, it is a little over two bulkheads, ten feet thick, to be at the end of the good ground section. I think that is the way I estimated it that those are the only concrete bulkheads we would put in. I am pretty certain I thought that was all that was necessary. I might have had a few amounts of concrete placed temporarily along the various headings to be driven, but my general proposition was that I would build two bulkheads, to protect the good ground section of the tunnel from the bad ground section, so as to confine any possible disaster to the small section through bad ground. I did not assume that Mr. Davies had included any concrete bulkheads in his unit prices on No. 7 and 8 items. I did not attempt to analyze his prices at all, but I assumed whatever bulkheads were built in the tunnel as it was actually built were included in his unit prices, Items 7 and 8. The only information I had

as to the number of bulkheads was from reading Mr. Davies' paper. I did not make any assumption as to the number of bulkheads actually built. I assumed it was not as many as Mr. Davies had in his actual construction of the tunnel. The cost of the two bulkheads which I said I would build in building the tunnel on which I have estimated, is not all included in my unit prices, the items Nos. 7 and 8. It may be scattered all through the various items. The cost of the bulkheads is distributed under the following items: sound tunnel rock, 50 per cent and bed tunnel rock sections 50 per cent of $12,750, 350 yards of concrete. That was all the concrete I assumed used in temporary bu-kheads. The cost [fol. 2882] of placing that concrete, I have assumed at $25 a yard, or $8,750, and its removal I have assumed at a lump sum of $4,000. That is all that makes up that figure of $12,750 and that is the only item that I have in my appraisal in connection with these temporary bulkheads. I divided that between excavation and concrete in good ground, and excavation, grouting concrete and test holes in bad ground. Items 4, 5, 7, 11 and 12, 20, 13 and 14 of my appraisal. I split it 50 per cent to bad ground tunnel section and 50 per cent to good ground tunnel section. I included in Item 7, 20 per cent of one-half of it. It was not figured by yards. I included in Item No. 7 about 175 yards.

When I adopted Mr. Davies' quantities on concrete in tunnel sound ground, and concrete in tunnel, bad ground, I did not know that Mr. Davies did not include the full amount of concrete on the tunnel as and when built. I did not deduct.

It would undoubtedly cost considerable money to cut out the massive bulkheads which were actually built. I just stated that I included in my appraisal $8,750 of that cost for building the bulkheads, and $4,000 for their removal,—the two that I have I put the cost of the removal of the two bulkheads in the same items as stated before. I did not [fol. 2883] compute the $4,000 which I assumed as the cost of removing such concrete bulkheads as I allowed in this tunnel as I would build it. I assumed it would take about that amount, and I did not assume days' labor on that special item or how many men. I simply took a lump sum. My experience with bulkheads would tell me about how much it would cost to take it out, under similar conditions.

I have had to do with bulkheads under similar conditions in all of these river tunnels—the Pennsylvania tunnels—under worse conditions. Probably a little bit worse. In taking out the bulkheads in a cast iron tunnel, you have got to be very careful or you will break up a lot of plates and it will cost you a lot of money to replace them; while in a rock tunnel you can shoot it out and it is done. The removal of bulkheads on the Whitehall Street tunnel, for example, was a more costly job than on this rock tunnel, but not a more precarious one. The difficulty is this, that you have a ten-foot bulkhead in a cast iron tunnel and you might break 77 plates in taking it out. You would have to replace those 77 plates, which would cost money, and you have to be very careful—more careful than in this rock tunnel like the Astoria one. I did not say I would put my bulkheads in a decomposed rock section. I said I will put my bulkheads at about the end of the good rock sections, [fol. 2884] at least I have not estimated any bulkheads in a decomposed rock section. If there should be included any such items, they are in my 20 per cent. profit to the contractor. That is my idea of the profit to the contractor.

My experience has been for the past ten years, except for two years with the Vehicular Tunnel, I think from 1914 to 1919, in working for the State Public Service Commission. I do not know whether this rapid transit work on which I was engaged was being done by the State of New York or the City of New York. I have been employed by either the State or the City practically all of that time and in supervising work being done by other contractors or by contractor. I do not know whether I had any responsibility as an engineer for a contractor with respect to subaqueous tunnel work during the past ten years. I have been responsible for any work they have done. I have given contractors advice at various times. My work for the City and for the Vehicular Tunnel Commission was a matter of supervising others. We only constructed two shafts, while I was with the Vehicular Tunnel Commission. It was a caison under compressed air, at the North River near the bulkhead, and actual building of the tunnel was not begun [fol. 2885] during my connection with the Vehicular Tunnel Commission. Aside from the sinking of shafts, the Narrows tunnel has not been built or begun.

From reading Mr. Davies' paper before the Society of Civil Engineers, regarding the Astoria Tunnel as built, I judge from the profile and plan submitted that they did drive headings outside of the net line of the tunnel and that the purpose of driving those headings was in order to get more safe for attacking the decomposed area. I learned that they drilled 43,300 feet of holes by compressed drills and 1,500 feet by core drills, some of which were inside the tunnel structure line and some of which were outside. I could not say from reading the paper, what proportion were inside and what proportion were outside. I assumed that they would not do excavation outside of the net line of the structure unless they wanted to do it to assist the work of going through the bad rock section. I do not know how many he drilled outside or how many he drilled inside. I assumed that they did a lot of high pressure grouting through those holes. I do not know that I have ever done any drilling for tunnels in decomposed rock sections through high pressure. The only tunnels where I have had actual tunnel working experience in my whole career has been the rapid transit tunnels on the lower part of the river, the Pennsylvania and at 60th Street. I was [fol. 2886] on the Pennsylvania, East River, from 1905 to 1910. We covered both subaqueous and cross tunnel in 32nd Street just west of 6th Avenue to 1st Avenue. By 6th Street I mean that I had something to do with the subway tunnel under the East River built by the City in connection with rapid transit. That was in 1916 or 1917. I was then Mr. Holland's assistant in the main office and I used to go over that work. That was after I was working on Whitehall Street, and after the time I was working on 14th Street. The hydro-electric plant was before I went with the City at all. As assistant for Mr. Holland I used to go over the work at the 60th Street tunnel and make suggestions to him. I was one of the resident engineers. When I came on the work I was assigned to the Old Slip, Clark Street and the Whitehall and Montague Street tunnels on both sides of the East River. Later I had charge of the New York side of the Old Slip, Clark Street and Whitehall-Montague Street. Later I devoted my time to the Old Slip, Clark Street and then went to 14th Street and had charge of both sides of 14th Street and later conducted

the New York side. Later I was called into the division office and assigned as Mr. Holland's general assistant. The tunneling work on this 32nd Street tunnel, from 6th Avenue to 1st Avenue was very similar to 92 per cent of the work in the Astoria tunnel. We had some pretty bad tunnel/ing west of Fifth Avenue, which might involve great [fol. 2887] disaster by dropping the high buildings in the tunnel. It was a matter of hazard, but not a similar hazard. One tunnel might be flooded and it would not amount to very much and the other tunnel might drop the Waldorf Astoria Hotel into it, which would amount to a great deal. The flooding of this Astoria tunnel would not amount to much, except you have to recover the tunnel. This work in 32nd Street was a different type of work than this Astoria job. All rock tunnels in good ground are carried in the same manner. Omitting the 8 per cent of very bad rock section in the Astoria tunnel, I think that the carrying out of the Astoria tunnel was much simpler than the carrying out of the Old Slip Clark, Whitehall, Montague and 14th Street tunnel. I have made my estimate on what I considered would be the cost under a contract to give the contractor a fair profit on carrying out the work. As I have analyzed it, that is a cost which I think is in that profit, taking into account the hazards and conditions and the methods of work as I have estimated it, and a part of my analysis and my assumption is based on the standard of work such as Mr. Holland and the Commission were conducting in the East River, in comparison with the work on the Astoria tunnel, except for the 8 per cent. As to that I have made my assumption from Mr. Davies' papers as to what the hazards and the conditions as to that.

[fol. 2888] The work on the Whitehall and the Montague Street from New York was a rock tunnel, pure and simple, cast iron lined, after the excavation was practically all done. No shields were used in New York. From Brooklyn they drove shields to the New York rock but the tunnel extended some 1,500 feet from the New York end in rock. We kept the water out by pumping, not from pressure. There was none at all used from the New York side, except to complete the last 60 feet of the north tube. It was used there, because the rock was so close to the net line of the structure that they broke through to soft ground. I think

the highest air pressure that was used on the job was about thirty-seven pounds. I never in my life experienced or encountered the problem of grouting at 500 pounds pressure with a decomposed rock mass through several hundred feet of tunnel heading, and if I were to be confronted with such a problem as to high pressure grouting, if I were dealing with this tunnel on which I have estimated, or any other way, the knowledge on which I would begin with respect to the conditions that I would have to encounter with respect to grouting would not be those that are set out in Mr. Davies' paper. High pressure grouting has not been done by me, but there are records of high pressure grouting all along the New York water supply aqueduct; very good records. I never was engaged in any of those projects. I have learned from reading Mr. Davies' contribution to the Society of Civil Engineers that in a considerable length of [fol. 2889] the tunnel heading the rock mass was so decomposed that it would not stand the back pressure of grouting at 500 pounds. His article states it was necessary to buttress the rock with large concrete buttresses in advance of the grouting. In my tunnel experience I did not have the responsibility for dealing with that kind of a situation. Mr. Davies' articles state that these buttresses as actually built in the tunnel reached dimensions such as thirty-four feet long by fourteen feet thick. From reading his article I learned that the back pressure of the grouting was enough to rupture even a buttress of that size. I learned from reading Mr. Davies' contribution to the Society of Civil Engineers the piping, valves and accessories with which each one of the grouting holes for the high pressure grouting was equipped. There is a picture there. I do not know whether it includes all of those things or not, such as piping and accessories for each hole consisted in general of five feet of four-inch extra heavy steel piping, three 4-inch extra heavy pipe flanges, one 4-inch extra heavy gate valve, a 4-inch plug cock, together with steel wedges and caulking material. I analyzed it to see what they did have to have. I know the piping and valves, stuffing boxes, and so forth, nipples. I do not know how much 4-inch extra-heavy steel piping cost in carload lots on June 1, 1923. I [fol. 2890] estimated the piping at $3.50 a foot. I did not

try to find out what the actual price was. I estimated it at $3.50 a foot.

I think that on page 632 of Mr. Davies' paper, the diagram illustrating the insertion of grout pipes in rock for high pressue grouting gives those details of the necessary piping and accessories that you have just referred to; I do not know whether it includes all of those things or not. I believe it is mentioned in the text. I am not able to state whether or not 4-inch extra-heavy steel piping in carload lots on June 1, 1923, cost 83 cents a foot.

I assumed $3.50 a foot for piping for grouting purposes. I haven't any unit price as to how much a 4-inch extra heavy all-iron gate valve cost on June 1, 1923, but I have a price for gate valves. I cannot tell the separate price for a 4-inch extra heavy all iron gate valve.

Referring to the unit cost for these gate valves separately, what I did here was work out the plant that I thought was necessary to do this job. To do the job which [fol. 2891] I am estimating, to build the Astoria tunnel. After I got the amount of plant that I wanted, that is, temporary timbering, piping, and such stuff as that, I put certain prices against it and it amounted to so much money. After I had got all the plant estimated, I said, "Why, I will arbitrarily charge 50 per cent of it to the sound rock section and 50 per cent of it to the bad rock section." By plant I mean, the sort of thing which I assemble for use in the doing of the work but which does not remain as a part of the completed structure; piping, valves, drills, presses, air receivers. I first made a list of our plant, as it is called in tunnel construction, and having made that inventory of the plant that I would require to do the job that I was estimating on, then I priced it and split it up arbitrarily between different items.

With respect to the details which Mr. Davies gave in connection with the diagram to which I referred as to the piping and accessories in connection with the grouting, I am not able to state from my records here a separate unit price for the 4-inch extra heavy all-iron gate valve. I could not confirm or refute a price of $15.80 each as of June 1, 1923. I did not know that the 4-inch flange iron cock described in the diagram by Mr. Davies cost $9.75 each as of June 1, 1923, or the cost of the three 4-inch extra-heavy

flanges which had to be provided in connection with each [fol. 2892] operation. I could not check or confirm a price of $6. for the three as of June 1, 1923.

I don't know that it is a fact that the materials alone for equipping each high pressure grouting hole would cost in the neighborhood of $40 each as of June 1, 1923. There is no unit cost given for the piping, valves, and accessories in these estimates, submitted in Exhibit 836. Grouting equipment is in 11 and 12 of these numbered items on page 1 of Exhibit 78; $64,812.90 represents the cost of grouting equipment in Items 11 and 12. I do not know as I can tell you how much of that item is for piping, valves, flanges, packing and so forth. I do not believe that I can give you that. I did not work that out in detail. That $64,000 item for grouting equipment is divided between Item 11 and Item 12, on the ratio of the number of barrels under each one of those items. I can give the dollars, if I multiply out each one of those. I never figured out to be able to say how many dollars for the cost of grouting equipment was under one and how much was under the other, because I took all the grouting—the 29,000 barrels of grouting and worked out my unit from that and used the same unit in both. I do not know whether I assumed the same grouting equipment that Mr. Davies used. I do not know what he assumed. I did not use his plant at all, in assuming the kind [fol. 2893] of equipment used in the construction of the tunnel. I assumed the use of what would be an up-to-date plant. If Mr. Davies feels that the equipment which he used before and which he used as a basis here was the best that could be devised for the purpose, I would disagree with him.

I cannot give any kind of details as to how much piping and valves and packing and so on, I provided for in my estimate. I figured out the plant that I considered necessary and listed it all under "Plant," which includes grouting equipment. I figured out the cost of my grouting plant at $2.22 a barrel. That included my compressor plant and my grout machines, piping that I thought was necessary, and so forth. I did not work out any amount. I just put in a price at so much money, without estimating or setting down quantities, I simply said I thought that the grouting material, piping that I thought was necessary and so forth.

I did not work out any amount. I just put in a price at so much money. Without estimating or setting down quantities I simply said I thought that the grouting material, grouting, pipe valves and so forth would cost so much money, as far as piping, flanges and valves and so forth would cost so much money. My figure is $2.22 a barrel for the grouting plant. That includes the compressor plant and also the piping, flanges, valves and so on. The details [fol. 2894] of my computation are my grouting tanks, hose, valves and fittings, replacements, I put in at $17,600, and my compressor plant I put in at $315,000. In my $17,600 figure, I included grout tanks $4,000; low-pressure grout hose, $500; 1½" high pressure hose, $5,000; valves and fittings, $500; replacements $600; high-pressure grout hose, $7,000; making a total of $17,600. I used eight grout tanks, 1,000 feet of grout pipe at 50 cents a foot, one hundred 20-foot lengths of grout hose at $2.50 a foot, and 2,000 feet of grout hose at $3.50 a foot; valves and fittings a lump sum; replacement a lump sum. The only ones that I took as lump sums were valves and fittings, $500; and replacements, $600. Those are all the details of these valves, fittings, pipes and so forth; all there is in there. There is lots of extra pipe in my compressor and drill plant that would be used for grout pipe; and compressor and drill plant and miscellaneous plant. All that I have got down here under the heading of "Grouting Equipment," so far as pipes, valves, packing, flanges and so forth are concerned, is this tem which I have given, but there is piping and valves and fittings scattered all through my plant estimate. You could use them. Anybody that used any judgment would use them. I am putting in this piping, and so on, but I think it is probably not suitable for 500 pounds pressure. I have $7,000 pounds—in for 500 pounds—for high pressure grouting, and this is all. The $1,100 was low pressure grout pipe and $5,000 more for grouting hose.

[fol. 2895] I have already stated that I did not have any concrete in for the concrete butresses which according to Mr. Davies' article, it was necessary to put in to buttress the rock in advance of the grouting. I assume Mr. Davies included the concrete for these buttresses in his items 7 and 8, in the unit prices. My answer as to that would be the

same as with respect to the bulkhead, on the basis that Mr. Davies got up the estimate, those things would all be included in his prices. I assumed that that temporary stuff is included in those prices. I did not know whether Mr. Davies had these buttresses, the concrete for them, in his quantities or not. I did not include and did not even plan to have, any buttresses in my estimate.

I do not know whether I gathered from the paper or not that in some portions of the Astoria tunnel heading conditions of such geological chaos were encountered that it was necessary to proceed with the heading by first tunneling completely outside of the line of the tunnel. I know that he did tunnel outside of the net line of the structure. I assumed that Mr. Davies' items—all of his quantity items—included the work which, if he was paying for it, would be included between the payment lines, that Mr. Davies' quantities covered all the pay work. We would not do excavation outside the line of the tunnel, under a city contract, but I knew that there was tunneling outside of the line of the tunnel. I made no attempt to check Mr. Davies' quantities to see what a tunnel with a net line—an interior structure 18 by 19 feet, the quantities would amount to. I took the cubic yardage of this tunneling outside of the [fol. 2896] net line that he had given, and assumed that that would be the pay yardage that he intended to pay for. I assumed that his estimate included the cost of doing all of the work, whether it was inside or outside the net line. The situation as to this would not be similar to the situation with respect to the buttresses—that if Mr. Davies included the cost of those things in the $463,000 item for items not classified, they would be omitted on my basis.

By the Master:

I did not include them in the twenty per cent profit. I included them in my unit prices.

By Mr. Ransom:

As to how much tunneling outside of the line of the tunnel included in my unit prices, I took Mr. Davies' quantities, and on the basis that he was going to do between 14 and 15 yards of excavation per foot, as it works out from

the various tables, that is what was the pay quantity. Now, if it was necessary to go outside to get the tunnel done, or if he had to handle more than 15 yards, that would be covered by the unit prices. Now, here is excavation. Let's say, to take a round figure, that there is 1,000 yards of excavation shown at such and such a unit price by Mr. Davies. I do not know whether that 1,000 yards does or does not include tunneling outside of the line of excavation. I did not attempt to check it. If it did include the yardage of the tunneling outside of the excavation, why, then, of course, when I adopted Mr. Davies' quantities and applied my unit price to it, why I would have covered all the excavation both inside and outside the net line of the tunnel, if I adopted his quantities, provided those quantities included the tunneling outside of the line. My estimate includes complet-
[fol. 2897] ing the tunnel, and in completing the tunnel, I assume that Mr. Davies has estimated the quantities required in the completed structure. If we were doing work for the City and we went outside of the net line of the tunnel, the contractor would not be paid for it. That would be covered by his unit cost. In other words, in making a section of a tunnel we have put on there the interior finish. Then we show a line that we call the net line of the structure. That line means that there is no excavated material can remain within there. Then we put outside of that what we call a payment line, and if the contractor is fortunate enough not to have to take anything out between the net line and the payment line, why, he gets his job done without handling that much material. If he has to go out beyond that payment line, he has to handle that rock or earth or whatever the material may be at a cost which is included in his unit prices. In other words, we have a certain payment line we fix on a drawing and we pay for that whether it is taken out or whether it exceeds that. I have assumed this yardage included excavation, necessary about the tunnel. I do not know what certain drifts he drove or anything about it and I haven't any idea what he did. He has stated that, to introduce this structure under Item 4, that would be 63,395 yards of rock excavation. As to having this yardage within the net line or within the payment line, or both
[fol. 2898] inside of and outside of the payment line, I am assuming that those quantities are correct. If those quan-

tities are not correct, I do not know. I assumed that the unit prices given in Exhibit No. 836 covered the cost of doing all of the work necessary to complete the tunnel, whether it included excavation tunnel, whether it included anything else outside of the net line or inside it. When I adopted Mr. Davies' figures—for example, this $63,000 figure I just referred to—of course, I did not assume that I did not have to make any other provision anywhere else in our estimate for the cost of excavation outside of the net line or outside of the payment line. I figured out the number of men required to do that work and the number of days it would take. My unit price for excavation in good ground is $19.93 a cubic yard and in bad ground it is $72.07.

I presume I learned from Mr. Davies paper that the rock excavation, extraneous to such tunnel heading required concrete work in excess of that within the tunnel line. And if so, the situation as to that concrete work, as far as my estimate is concerned, is similar to that to which I have testified as to the concrete and the bulkheads and the buttresses—I have treated it in the same way. I never did assume the plant and equipment necessary for the work of drilling and mucking on the Astoria tunnel.

[fol. 2899] In Exhibit No. 78 the special steel emergency doors with compressed air operating mechanism enters into the cost of my bulkheads. In the price I gave you this morning, that included the building of the bulkheads and operating them, complete. I did not work out any details of doors. I said those bulkheads would cost that amount of money. I did not make any estimate as to the doors, or as to the weight of steel in the doors. I assumed any kind of operating mechanism. I just assumed my bulkheads would cost that amount of money. I did not estimate the cost of the operating mechanism for each door.

In regard to the large amount of grout hose required and the large quantity of pipe, fittings, gate-valves, caulking materials, steel wedges and other accessories required for the consolidation of the decomposed rock, I cannot give you an estimate of the amount of pipe, fittings, gate valves, caulking materials, steel, fittings, gate valves, steel wedges and other accessories that I used in my estimate in pounds or feet. I assumed a period of three years and nine months

for the building of this tunnel and I know that Mr. Davies assumed a period of four and a half years for the construction of this tunnel. The period of time required makes some difference as to the cost. I assumed that the gangs would work with three shifts per day. The Sunday shift was a watch gang. I have never found the necessity of proceeding with the work on Sundays even on such tunnels [fol. 2900] at such shallow depths as those in the East River. Shut down at eight o'clock Sunday morning and start up at eight o'clock Monday morning. I do not think Mr. Davies assumed anything. As I remember his testimony, he stated he did not work up the gang as required to do the work, and he did not make his estimate in that way. He stated he did not know how many men were required to do the work, because he did not make his estimate in that way. I do not think he so stated in his testimony that he caculated the cost on the basis of working three shifts a day, including Sundays. My period of actual construction work is three years and nine months.

I did not make another estimate besides the one I put in evidence here with respect to the Astoria Tunnel. I have only made one estimate of this tunnel; that is I have revamped this estimate maybe two or three times, but when I finally arrived at this, it is my estimate. I didn't make up an estimate as to its cost on a different basis, as to this tunnel, based on the contractor's bid prices in this region. In making up this estimate, Exhibit No. 78, I assumed full knowledge of the geological conditions to be encountered as expressed in Mr. Davies paper. I made a rough estimate of the original cost of this tunnel after I had gotten this estimate down, using the information in Mr. Davies' paper [fol. 2901] and roughly estimating what I considered as of worth in those days and going through that bad ground, and I estimated the cost of this tunnel at about three million dollars for the original cost, which figure I found Mr. Davies had given out, in the affidavit he made in 1920, I think, in the case of the East River Gas Company against Charles A. Newton, Attorney-General and Lewis Nixon. We took the cost of the tunnel as given in that affidavit by him. That was not an estimate by Mr. Davies of the actual original cost of the tunnel, not as I read the affidavit. That was

an estimate with respect to the cost of the tunnel if it had been built at prices of labor and material prevailing as of June 1, 1914, and of course, prices at the time the tunnel was built were higher than in 1914, but not very much higher. There was very little change in prices until 1916. That is my judgment and experience, on the bids for the downtown tunnels. It is not hearsay testimony. That is work I was actually on. I did not receive these bids, but I carried out the contract under them; I was responsible for the work done in accordance with those contracts. As to labor and material, there was very little fluctuation in prices between 1910 and 1916; there was not a great amount of difference in price I should say that the prices at the time this tunnel was actually built were about the same as of January 1, 1914. If there was any change, it was not necessarily upward. I know from my experience there was very litte fluctuation in price before 1916. I did not examine the [fol. 2902] exhibits in this case which show that the actual disbursements and the actual cost of this tunnel, aside from piping, pumping, ladders, and so forth, as checked by the defendant Commission was over $4,000,000.

I got the impressions as I read Mr. Davies' article on the Astoria Tunnel (page 644 and page 633)that they did not get the Diamond drills in there quick enough. Both of these pages refer to Diamond drilling. What I directed attention to on page 633, was the first first three lines in the first paragraph, "Reference is made in the following pages to the use of the diamond drill. On first meeting with the decomposed lot at the Bronx end, a one and seven-eighth inch diamond drill was set up" and so forth. Then on page 644 it speaks of the recovery of the tunnel and says: "The second step in the program was to fill completely the space between the completed arch and the rock bench between bulkheads and began by drilling through the Bronx bulkhead" and so forth. I will show you one more, which is Plate No. 26. According to the paper they met the decomposed rock back here (indicating on diagram). In other words, they met decomposed rock 50 feet before they started using the diamond drills in the Bronx heading. That is my interpretation of that diagram. Referring to that interpretation in spite of Mr. Davies own statement

that, on first meeting the decomposed rock, they began using the diamond drill—that is the statement being on first meeting the decomposed rock at the Bronx end a diamond drill was set up, that would mean to me that as soon as they met [fol. 2903] the decomposed rock at the Bronx end they began using the diamond drills. If it were not for this cross section of the tunnel, which shows something different. The paper and the description of the plant do not agree. I can not reconcile them.

At the request of the Attorney-General, I examined Mr. Davies estimates for the cost of reproducing the Ravenswood Tunnel.

Redirect examination by Mr. Donnelly:

In preparing the estimate of the cost of the Astoria Gas Tunnel, I studied Mr. Davies' paper. From that I found [fol. 2904] that 92 per cent of the tunnel was constructed through good rock, where ordinary tunneling methods were used. The other 8 per cent was through a very badly disintegrated rock section which presented unusual difficulties. The first thing I did was to divide the tunnel between good rock and bad rock and I then assumed that I would make a certain progress in good rock and a certain progress through the bad rock section. With that, I then worked out the time required to do work through those sections as follows: 450 working days, and from the Bronx 119 working days. Bad rock tunnelling 147 days and from the Bronx, 668 days. Cleaning up and concreting the bad rock section, 78 days from the Astoria and the Bronx shafts. Now, with the time, my next process was to work out the amount of plant that I thought would be necessary to do the work. The amount of plant that I worked out amounted to $497,919 net. I then worked out the size of my gangs and the class of labor that I would need, both on the surface and in the tunnel and for superintendents to carry on the work, per day or per month, as the case might be. Then that gave me a certain amount of labor as the total cost of labor required, and from that I reduced my unit prices as given in my exhibits. In the unit prices given in the exhibit there is included the following items: General Office [fol. 2905] Expenses, Overhead Superintendence, Top

Labor, Tunnel Labor, Liability Insurance, Bond Premiums, Pressure Plant, Concrete Plant, Pumping Plant, Power and Explosives, disposal, caulking lead, cast iron and steel, concrete materials, and so forth. With those costs I produced my estimate, where I did not use Mr. Davies' figures. To those different classes of labor that I assigned the rate of wages payable to each and the progress that they would make per day with the work. I figured that out, likewise. I assumed in sinking the shafts through rock the average progress per day would be 1.75 feet, and in the Astoria tunnel, in sound rock 10 feet per day, and from the Bronx heading 8 feet per day. Through the bad rock section I assumed .5 of a foot per day. In making up my estimates, I figured the number of men in each shift and each kind of labor that would be employed in the work.

Taking up the Whitehall, Montague Street tunnel, the bid price for that tunnel was $5,974,809.50. That tunnel was 6,857 feet long of double-track tube. It was a cast iron lined tunnel, some of it shield-driven and some of it excavated through rock. That type of tunnel is considered more expensive to construct than a rock tunnel. There was no station.

Referring to the Whitehall-Montague Street tunnel, the Old Slip Clark tunnel, the 14th Street-North 7th Street East River tunnel, the Hudson River Vehicular tunnel, and [fol. 2906] the Narrows tunnel between the Boroughs of Brooklyn and Richmond, and also referring to the 60th Street tunnel, it is a fact, that the contracts for all except the Narrows tunnel were let as a result of competitive bidding. They have done work on the shafts of the Narrows tunnel, and the contract for those shafts was likewise let as a result of competitive bidding. Before leaving the Vehicular tunnel job, my salary was $8,500, and now it is $12,000.

I have been in those tunnels about which I testified I worked on. I was appointed to my present position, by the Board of Estimate and Apportionment. I have had under me in my present position from ninety to ninety-five engineers and an office force of half a dozen stenographers and clerks and office boys. At page 9580 of the mimeograph copy of the record, I was incorrectly quoted as follows:

"Q. Wouldn't you say that Mr. Davies' paper discloses that the conditions so far as rock and the like which were encountered in the construction of the Astoria tunnel are concerned, were conditions of the utmost geological demoralization.

"A. Eighty per cent of it."

It should be eight per cent instead of eighty per cent. At page 9608 of the mimeograph copy of the record in the testimony I was reported as saying—

"Q. Or is it your experience that when you are down in the heading doing the work, that you get a lot of information that you could give to the men in charge if they wanted it?

"A. No, I find that you cannot get it there."

I think I must have said, "You can get it there."

[fol. 2907] I was present at the time Mr. Davies testified here and read the testimony which he gave before the Special Master. Mr. Davies states on page 7270 of the record in his answer to a question in record to the 6 per cent for unclassified items: "That include such work as is commonly on private contract done as Force account, extra work."

Item No. 4 of my estimate for that item is $19.93 per cubic yard. I do know of rock tunnel excavation that has been carried on for that price in recent years. There was a contract let in Providence, Rhode Island, August 30, 1922, hard granite rock; I have seen a sample of it; in which the three low bids, as published in the Engineering News, are given at $12, $13.50 and $14.55 per cubic yard. And out in Kansas City, as published in the Engineering News, bids received March 11, 1924, rock excavation on Contract 1, the three low bids were $15.96, $14.00 and $18.00. And on Contract 2, $18.15, $20 and $19.25. I say those were for rock tunnel excavation.

(Printed Copy of affidavit made by Mr. J. Vipond Davies, May 12, 1920, in action in this Court by the East River Gas Company of Long Island City, as Complainant, against Charles D. Newton, as Attorney General of the State of New York and others marked Defendants' Exhibit No. 113 for Identification.)

[fol. 2908] New York, July 28, 1924.

Met pursuant to adjournment.

(Copy of report of Fire Insurance Fund, Earnings and Expenses for the year ended December 31, 1923, received in evidence and marked Defendants' Exhibit No. 114.)

(Copy of report of Liability Insurance Fund, Earnings and Expenses for the year ended December 31, 1923, received in evidence and marked Defendants' Exhibit No. 115.)

The defendants rested.

(Chapter 80 of the Laws of 1798 of the State of New York, received in evidence and marked Plaintiff's Exhibit No. 992.)

(Chapter 129 of the Laws of 1801 of the State of New York, received in evidence and marked Plaintiff's Exhibit No. 993.)

(Chapter 86 of the Laws of 1913 of the State of New York, received in evidence and marked Plaintiff's Exhibit No. 994.)

(Chapter 166 of the Laws of 1826 of the State of New York, received in evidence and marked Plaintiff's Exhibit No. 995.)

(Chapter 763 of the Laws of 1857 of the State of New York, received in evidence and marked Plaintiff's Exhibit No. 996.)

(Chapter 522 of the laws of 1860 of the State of New York, received in evidence and marked Plaintiff's Exhibit No. 997.)

[fol. 2909] (Answer of the Mayor, Aldermen and Commonalty of the City of New York, verified March 21, 1851, in the case of Knott against Thayer, et al., as printed in the Willard Parker Hospital case record in the Court of Appeals at pages 414 to 429 inclusive, received in evidence and marked Plaintiff's Exhibit No. 998.)

(Report of the Commission on Commerce and Navigation of the Senate of the State of New York, dated March 17, 1856, as printed on pages 321 to 330, inclusive, of the record on appeal in the Willard Parker Hospital case in the Court of Appeals, received in evidence and marked Plaintiff's Exhibit No. 999.)

(Resolution of the Common Council of the City of New York, approved by the Mayor December 31, 1856, changing

the map and plan of the City and exterior line thereof, as printed on pages 319 to 320, inclusive, of the record on appeal in the Court of Appeals in the Willard Parker Hospital case, received in evidence and marked Plaintiff's Exhibit No. 1000.)

(Resolution of the Common Council of the City of New York, approved by the Mayor, March 11, 1857, as printed in the record on appeal in the Court of Appeals in the Willard Parker Hospital case at page 330, received in evidence and marked Plaintiff's Exhibit No. 1001.)

(Sheet No. 5 of the Atlas of New York Harbor from East 9th Street to East 20th Street, as shown on the Harbor Commissioner's Map of 1857, such sheet being found at page 500 of the record on appeal in the Court of Appeals in [fol. 2910] the Willard Parker Hospital case, photostat copy received in evidence and marked Plaintiff's Exhibit No. 1002.)

(Photostat copy of map showing the pierhead and bulkhead lines in the East River as approved by the War Department June 9, 1903, and as found at page 522 of the record on appeal in the Court of Appeals in the Willard Parker Hospital case, received in evidence and marked Plaintiff's Exhibit No. 1003.)

It is stipulated by and between counsel for the plaintiff and counsel for the Attorney-General, subject to any objections as to the materiality, relevancy and competency of direct proof, that Lot No. 14, Block 369, is shown on the present tax maps of the City of New York and is subject to taxation against the Consolidated Gas Company of New York, and that City taxes have been paid on Lot No. 14, Block 369 by the New York Mutual Gas Light Company from 1871 to 1922, and by the Consolidated Gas Company from 1922 to date.

[fol. 2911] Walter R. Addicks recalled as a witness in behalf of the plaintiff in rebuttal.

Direct examination by Mr. Ransom:

Mr. Little, the engineer of the defendant Attorney-General, has presented an estimate as to the cost of production of gas for the year to end April 30, 1925, in which he said

he intended to use the actual cost of gas oil to the company for that period, but he used a figure of 5.351 cents per gallon, as he testified at page 9977 of the mimeographed record. Referring to Plaintiff's Exhibit 330, which was received in evidence at page 2294 of the mimeographed record and which was a contract with the Standard Oil Company of New Jersey dated January 15, 1924, the option provided in that contract was exercised by me in behalf of the plaintiff company last month. I did that after inviting bids from various oil companies. I did not get any bid lower than 6 cents a gallon. The base price under the option exercised was for the period from October 1, 1924, to December 31, 1924, 5½ cents at the refinery with transportation added, and the base price under that option from January 1, 1925, to March 31, 1925, 5¾ cents under the same terms. Before I decided to exercise this option I sent out invitations for bids to The Atlantic Refining Company, Gulf Refining Company, the Pure Oil Company, Sinclair Refining Company, Standard Oil Company of New Jersey, Standard Oil Company of New York, the Sun Oil Company, Texas Oil Company and the Tidewater Oil Company. I did get bids [fol. 2912] from companies on a quantity of oil. The option related to 71,500,000 gallons. My inquiry for bids related to all or any part of that quantity. I received a bid for 18,000,000 gallons, ten per cent more or less, to take approximately 3,000,000 per month, and the second bid for two and a half million gallons per month for the three months of October, November and December only, making seven and a half million gallons in all for delivery during the last three months of 1924. That price was six cents net per gallon refinery and 6½ cents per barrel lightcrage charge in amounts of not less than 1,500 barrels. That is at Bayonne, f. o. b. The price at which it was available to me under my contract of January 15, 1924, was lower than either of those bids. I accordingly exercised the option. Under date of June 12, 1924, I sent out the request for bids with respect to the exercise of the option, and on June 25th, I agreed with the Standard Oil Company of New Jersey that I would exercise the option. I received an acknowledgment and acceptance by letter dated the same day. It is postmarked the 26th, as near as I can read it. I have here a carbon copy of the request for bids, also photostatic copies of the letter in which I asked for bids, and of various

the replies that I received. The letters to all these different companies that I have mentioned under date of June 12, 1924 are all identical, and this photostatic copy of the form sent to the Atlantic Refining Company is the same and is identical with the others.

[fol. 2913] (A copy of the letter of June 12, 1914, received in evidence and marked Plaintiff's Exhibit No. 1004.)

I did not receive bids or quotations from any other companies; not on any part of the seventy-one and a half million gallons of oil needed during the period and in March, 1925, that I recall. However, the letters will show clearly.

I have also been receiving during the present year some gas oil under Plaintiff's Exhibit No. 326, which is the agreement of January 9, 1924, with the Atlantic Refining Company. Under that contract I have experienced difficulties as to delivery. Nearly, as a rule, on all deliveries, there is uncertainty as to delivery.

With reference to the parcel of land at Exterior Street and Cromwell Avenue, for the storage station and central garage of the plaintiff company, as to which a witness for the defendants testified that the availability for a railroad siding would add substantially to the land unimproved, such a siding has been procured. My arrangement with the New York Central Railroad has been evidenced by agreement. I have photostatic copies of that agreement. And I produce a photostatic copy of a letter from the Superintendent of the Electric Division of the New York Central Railroad. This letter was received by me as the result of a conversation which I had with him and I replied to that under date of May 24, 1924. This is a photostatic copy of my letter to him. The siding is to be immediately built. Contracts have been made for the erection of the building for the plaintiff on this property.

(The letter from the Superintendent of the Electric Division of the New York Central Railroad, dated May 22, 1924 and Mr. Addicks reply dated May 24, 1924, received in evidence and marked, respectively, Plaintiff's Exhibits Nos. 1005 and 1006.)

I have photographs of a model that was constructed with [fol. 2914] respect to the buildings which are to be erected now on this land and to the ultimate construction in the

future. A siding will be put in in accordance with that plan and a building will be erected on a part of the land, and the whole land will be occupied eventually in connection with the entire plan.

By the Master:

We will utilize the entire property at the present time, but the building will be put on the south side and will occupy only about half of the entire plot. The siding will be put in on the other side and the steel for those buildings will be shipped into that siding.

By Mr. Ransom:

That is, at the present time, we are not going to cover the entire area with the building and will use the remainder of the plot for the storage temporarily of large pipe for the leading from the Hunts Point plant. That is the reason why I have expedited the installation of that siding, and also to get the steel in directly to the building on the siding. I have an offer for the construction of the building that has been accepted. These photographs and the model were made in the regular course of my business in connection with this project.

(Photographs and model marked Plaintiff's Exhibit No. 1007 for identification.)

[fol. 2915] (Communication dated June 21, 1924, from the Atlantic Refining Company to the Consolidated Gas Company, in reply to latter's communication dated June 12, 1924, received in evidence and marked Plaintiff's Exhibit No. 1008.)

(Communication dated June 19, 1924, from the Gulf Refining Company to the Consolidated Gas Company, in reply to latter's communication dated June 4, 1924, received in evidence and marked Plaintiff's Exhibit No. 1009.)

(Communication dated June 17, 1924, from the Sinclair Refining Company to the Consolidated Gas Company, in reply to latter's communication dated June 12, 1924, received in evidence and marked Plaintiff's Exhibit No. 1010.)

(Communication dated June 25, 1924, from the Standard Oil Company of New Jersey to the Consolidated Gas Company, in reply to latter's communication exercising option

under the contract, received in evidence and marked Plaintiff's Exhibit No. 1011.)

(Communication dated June 25, 1924, from the Consolidated Gas Company to the Standard Oil Company of New Jersey, received in evidence and marked Plaintiff's Exhibit No. 1012.)

(Communication dated June 24, 1924, from the Standard Oil Company of New Jersey to the Consolidated Gas Company, received in evidence and marked Plaintiff's Exhibit No. 1013.)

[fol. 2916] (Communication dated June 23, 1924, from the Sun Oil Company to the Consolidated Gas Company in response to latter's invitation for bids, received in evidence and marked Plaintiff's Exhibit No. 1014.)

(Communication dated June 13, 1924, from the Texas Company to the Consolidated Gas Company in response to latter's invitation for bids, received in evidence and marked Plaintiff's Exhibit No. 1015.)

(Communication dated June 21, 1924, from the Tidewater Oil Company to the Consolidated Gas Company, received in evidence and marked Plaintiff's Exhibit No. 1016.)

[fol. 2917] Frank H. Nickerson recalled as a witness for the plaintiff in rebuttal.

Direct examination by Mr. Ransom:

Referring to Mr. Little's testimony as to a figure of 5.351 cents per gallon for gas oil for the year to end April 30, 1925, I have taken from the company's contracts and books and records which are in evidence in this case the details of the computation as to the average cost of oil to the company for that period. On a basis comparable with the figures used by Mr. Little, which were applicable to The Astoria Light, Heat and Power Company, I have determined this average cost.

(After detailing the elements of the computation:) The total of all gas oil applicable to the Consolidated and Astoria Companies, on hand and contracted for the year ended April 30, 1925, in 80,834,822 gallons, having a total value of $4,344,842, which equals an average price per gallon of

5.375 cents, delivered at Astoria and the Consolidated plants in Manhattan.

Referring to Mr. Little's estimate with respect to the year ended April 30, 1925, for bituminous coal at a price of $6.10 per ton, which he said was the contract price for the coal to be delivered during that period, but without taking into account the 200,000 tons of bituminous coal on hand to which Mr. Little referred but which he said he did not take into account, I have made a computation which takes into [fol. 2918] account that coal at the price at which it stood as having cost on the company's books, together with the contract price of the coal to be delivered to which Mr. Little referred.

Of the bituminous coal contracted for, a balance of 418,194 tons was applicable to The Astoria Light, Heat and Power Company at $6.10 per ton, equalling $2,550,983, which represents the weighted average contract price alongside at Astoria. Taking into account the quantity which was on hand on May 1, 1924, which Mr. Little mentioned as 200,000 tons, the stock on hand at the Astoria plant on May 1, 1924, was 180,359 tons at an average cost of $7.0707 per ton, equal to $1,275,270, or a total of 598,533 tons at a cost amounting to $3,826,253, or an average price per gross ton of $6.3925. That is the weighted average cost of bituminous coal delivered alongside at Astoria for that period.

With respect to ammonium sulphate, for which Mr. Little used in his exhibit for the year to end April 30, 1925, a figure of 3.495 cents per pound, this being the 1923 actual figure as shown by previous exhibits, the current figure as found in the company's books is 2.612 cents per pound.

With respect to cyanogen, for which Mr. Little used in his exhibit the 1923 price shown in my exhibit of 18.86 cents per pound, the actual current price realized is 12 cents per pound.

[fol. 2919] With respect to anthracite coal, for which Mr. Little used $8.620 per ton, and for which Mr. Little said it would be more consistent to use the present contract price, the price per gross ton, giving effect to the entire contract for anthracite coal is $10.789867, delivered within and without the harbor limits under the entire contract for all the companies. I have not the detail of the price delivered alongside at Astoria; I would have to make a computation

to show that; there was a little coal delivered to the Astoria that was used by the A, C, and D plants in 1923. The figure of $10.6989 which I gave as the weighted average for all plants takes into account the coal on hand at the beginning of the period. The present contract price for anthracite delivered within harbor limits is $10.759867, and the price delivered at Astoria has an additional sum for delivery outside harbor limits.

I have taken Plaintiff's Exhibit No. 888, which was the cost of production and distribution of gas by the Consolidated Gas Company for the year 1923, and have given effect in a revision of Exhibit No. 888 to the current prices to which I have testified, in respect to gas oil and coal, cyanogen, ammonium sulphate, and so on, and as to oven coke I have used the price paid under current contracts in place which was paid for such coke as was purchased, the current coke price being $9.80 per gross ton. This document, to which [fol. 2920] counsel refers, is the same in respect of operating expenses and credits as my Plaintiff's Exhibit No. 888, except that I have given effect to the prices of coal oil and by-products which were effective as of May 1, 1924, and will continue under contracts for the period to which Mr. Little testified. Also, in making this revision of Plaintiff's Exhibit No. 888 for that period, I have eliminated the return on investment and the return on replacement cost as to the 14th and 42nd Street plants, as not applicable to any part of the years 1924 or 1925, and with respect to the items as to which there have not been charges either upward or downward in unit prices I have not changed the previous exhibit. In other words, the quantities are the same as 1923 operations in this exhibit, just as Mr. Little in his exhibit for 1923 took actual quantities. In respect to the added cost of gas of not less than 650 B. t. u.'s, I have made the recomputation from the previous exhibit in the case so as to give effect to the changed price of gas oil.

(Revision of Plaintiff's Exhibit No. 888, with current prices received, in evidence and marked Plaintiff's Exhibit No. 1017.)

In the same way as I revised Plaintiff's Exhibit No. 888 so as to give effect to the current prices during the year

ended April 30, 1925, I revised Plaintiff's Exhibit No. 891 so as to give effect to the current prices, and, likewise, in the [fol. 2921] revised computation I eliminated the 14th and 42nd Street plants from the reproduction cost of property and investment as in no wise applicable to 1924 or 1925. In Plaintiff's Exhibit No. 1017, and in this statement shown to me by counsel, I did not change the taxes in respect to those two plants; the basis was the volume of business for 1923, and I assumed that the unit cost of taxes would not decrease in 1924.

By the Master:

The elimination of the 14th and 42nd Street plants would affect the amount of the real estate taxes, but, in order to change the taxes, I would have had to still further amend the report, and the elimination of this item of real estate taxes in a measure has been offset by the Hunts Point taxes which were not included for any part of the year 1923.

By Mr. Ransom:

On the basis which I have indicated, namely, that of giving effect to current prices as to the indicated gas-making materials and as to the indicated by-products prices in 1924, in the ensuing contract period, this document referred to by counsel is true and correct, and likewise it does not add or take into account the cost of furnishing gas of not less than 650 B. t. u.'s, and Plaintiff's Exhibit No. 1017 also did not.

[fol. 2922] (Revision of Plaintiff's Exhibit No. 891, so as to give effect to the indicated current prices of materials and by-products, received in evidence and marked Plaintiff's Exhibit No. 1018.)

[fol. 2923] Herbert C. Davidson recalled as a witness on behalf of the plaintiff in rebuttal.

Direct examination by Mr. Ransom:

I have prepared a tabulation and graphic chart of the average rate per hour paid each year by the Consolidated

Gas Company to employees in its mechanical departments from January 1, 1913, to June 30, 1924. The pay rolls of the mechanical departments of the company show both the number of hours employed and the amount of wages as to each employee, so that the aggregate amount of wages in dollars divided by the aggregate number of hours employed shows the average rate per hour actually paid by the company to its employees in all mechanical departments. I have prepared a chart (referring to paper) which shows the actual rates of pay down to June 30, 1924. I have shown in the upper left hand corner the actual hourly rates paid during each year from 1913 to date, together with a column headed "Index." The figures in the column headed "Average rate per hour" are for the actual average rate paid by the Company, as shown by the books and records of the company. And the column entitled, "Index," is a computation of mine. I have adopted an index of 100 for the year 1913 and have computed each index of the other years, based on the relationship between the average rate per hour during that year and the rate in effect in 1913. For illustration, an average rate of pay per hour which was 100 per cent in all cases in the year 1916, the average rate would be represented by 200, in 1920. I have shown the same [fol. 2924] information graphically in this chart. That is, I have plotted the index numbers shown in the table so as to show the trend of what the company is actually having to pay for labor. This detail correctly states the wage trend in all mechanical departments.

(Chart received in evidence marked Plaintiff's Exhibit No. 1019.)

I also prepared, at plaintiff's request, a graphic chart entitled Consolidated Gas Company of New York, index of actual prices paid during the period from January 1, 1922, to June 30, 1924, for two-inch wrought iron pipe, mill price, one-inch black steel pipe, mill price, and iron castings, and have shown on this chart the actual prices paid by this company for the items stated during that period. I have similarly set up here the prices as of June 1, 1913, as the index price and have plotted the index of the contract prices paid in 1922, 1923 and 1924, using the January 1, 1913, prices as the index price. This chart sets forth cor-

rectly the prices actually paid, so far as commodities are concerned, during 1922, 1923 and 1924, and it shows the contract prices in force at the present time.

(Chart received in evidence and marked Plaintiff's Exhibit No. 1020.)

I have prepared similarly, at plaintiff's request, a chart entitled Consolidated Gas Company of New York, index of actual prices paid during the period from January 1, 1922, to June 13, 1924, for common building brick, checker brick and 2-inch rough lumber. The building brick and the lumber are used primarily in construction. Of course, [fol. 2925] some may be used in repairs, but the checker brick is essentially an operating item of material. This was prepared in a similar manner as my previous exhibits, and I have used the January 1, 1913, price as my index price, of 100. I have correctly set forth the relative prices paid for the three indicated commodities.

By the Master:

I can tell the latest purchases that we made for building brick in the last three months. The latest purchase by us of building brick was in March. We made purchase in January, February and March, 1924, at a uniform price. The latest purchased by the company was in March.

(Chart received in evidence, and marked Plaintiff's Exhibit No. 1021.)

By Mr. Ransom:

I have similarly prepared a chart entitled Consolidated Gas Company of New York, index of actual prices paid from January 1, 1922 and to be paid upon existing contracts to March 31, 1925, on anthracite broken coal, gas coal and gas oil. That is, I have taken the actual payments and plotted them on this chart, and have plotted the contract prices, to the end of the existing contract. I have used these prices of January 1, 1913, as the index number of 100. I have correctly stated and shown the course of the prices of coal and oil as actually paid and as shown by the contracts during that period.

(Chart received in evidence, and marked Plaintiff's Exhibit No. 1022.)

[fol. 2926] (Letter from Mr. W. R. Addicks, Vice President, Consolidated Gas Company, to Public Service Commission, dated June 26, 1924, and a copy of the Commission's reply of July 3, 1924, with respect to oil contracts, received in evidence and marked respectively, Plaintiff's Exhibit Nos. 1023 and 1024.)

[fol. 2927] July 24, 1924.

Met pursuant to adjournment.

Herbert W. Alrich, called as a witness by plaintiff in rebuttal, testified:

Direct examination by Mr. Ransom:

I have been personally familiar for twenty-one years with the land, and its use, designated as Block 369, Lot 14, situated within the Mutual plant. Since my familiarity with the property, it has always been occupied by tar separating and storage equipment and the piping pertaining thereto, and, in addition thereto, the surface of all the ground beyond the tar separators has been used for general purposes—the placing of materials and supplies being received in stock, construction material, coal and coke, and various materials and supplies have been placed there. There is a brick pump house in which there are the pumps used in connection with the tar separating equipment. Lot 14 is the bulkhead property, a diagram of which is shown in Exhibit No. 258, Lot 15 is the bulkhead itself which abuts the easterly end of Block 369. I would understand Lot 14 as representing the rights to the pier line at the easterly end of Block 369, together with certain abutting rights in the way you have described as being in the bed of Tompkins Street as laid out in 1925.

[fol. 2928] By the Master:

I should say that Lot 1 included all of the upland down to the bulkhead, and that Lots 14 and 15 collectively would represent the waterfront rights or properties of whatever

they might consist. Lot 14 on the diagram is entitled under water, but the tax assessor might regard some of the filled ground back of the bulkhead as pertaining to that lot.

By Mr. Ransom:

On Sheet 2 of Exhibit No. 258, the Master has indicated the line which would go across Block 369, Lot 1, if the easterly line of Block 368, Lot 1, were extended; the land which is east of that line as so extended is the land as to which I have given the structures and buildings located thereon. For example, the pump house in connection with the tar separators which are located to the north of Twelfth Street is located at a point where such line extended enters Block 369, Lot 1. In other words, assuming that that line as so extended represents what would have been the westerly line of Tompkins Street if it had been carried out, the pump house is located on what would have been the westerly line of Tompkins Street and I should say it is located about half within what would have been the bed of Tompkins Street. To the north of that, within the area east of what would have been the westerly line of Tompkins Street, there are these various tar separators, tar storage tanks, filter for piping—water and tar pipe, pumping lines in connection with this separating storage equipment. The tanks are in [fol. 2929] the neighborhood of sixty feet long and fifty feet wide, the easterly one being smaller than the westerly one. Such occupancy and use by the plaintiff company or the New York Mutual Company has continued, to my personal knowledge, for a good many years more than twenty years. There is absolutely not now vacant land within this plant to which these buildings and structures could be transferred.

[fol. 2930] George E. Woods, recalled as a witness in behalf of the plaintiff in rebuttal, testified as follows:

Direct examination by Mr. Ransom:

Referring to the exhibit placed in evidence by Mr. Little in his testimony, I have prepared a statement showing a comparison of Astoria water gas cost and Consolidated water gas cost for the period from January 1, 1922, to

April 30, 1924. This exhibit shows a comparison between the Astoria water gas cost and the Consolidated water gas cost, made up of four general headings which indicate the actual cost of Astoria, the cost of Astoria based on Consolidated unit prices, the Consolidated water gas cost actual, and the variation between the Consolidated water gas compared with the Astoria water gas. In the left hand column I have shown in the form in which it has been commonly used in these cases the different kinds or classes of labor and material entering into the manufacturing of water gas, and in the second column I have shown the quantity per thousand used, then the unit price of the material and the cost per thousand cubic feet, that being in the Astoria water gas manufacture. That is the actual cost as taken from the books of the company and as shown by previous exhibits in the case. Then I have shown the Astoria water gas cost on the same basis, except introducing the unit prices of material paid by the Consolidated Company in Manhattan; no change in labor, and the rate of pay of labor would be the same; but I have given effect [fol. 2931] in this column to the material prices paid at the Manhattan plants of the Consolidated so as to get a comparable figure. Then under the next group I have similarly shown the actual water gas cost in Manhattan, and finally, the variation between the Consolidated water gas cost in Manhattan and the Astoria water gas cost. In making that computation I have elminated from the Consolidated and the Astoria cost of water gas certain items which I have shown below and which were testified to by Mr. Little as proper elimination, although not eliminated in his charge. In the first place, I have taken out of the Astoria water gas cost the figure of .02 of a cent for gas storage at the Astoria holders, and out of the Consolidated actual water gas cost, the figure of 2.42 cents for the cost of operating the outlaying holders, and so on, in Manhattan. Then I have eliminated from the Consolidated water gas cost, in order to get a comparable figure, the rentals paid to the City of New York for the use of bulkheads in Manhattan, there being no rental paid for the use of bulkheads at Astoria. This is a true and correct statement on that basis.

By Mr. Donnelly:

This proposed exhibit covers the period from January 1, 1922, to April 30, 1924. It purports to show the cost of making gas at all of the Consolidated water gas plants in the Borough of Manhattan. I do not include the 14th and 42nd Street plants. Those were coal gas plants, and never were water gas plants.

(Statement received in evidence and marked Plaintiff's Exhibit No. 1025.)

[fol. 2932] By Mr. Ransom:

For convenience and for graphic showing of the water gas cost in Manhattan at the Consolidated plants and at the Astoria plant, I took a chart identical with that prepared by Mr. Little and indicated on it the comparison which would obtain if the cost of the items concerning which he was cross examined were eliminated. The top line on this chart, which is called "Holder Cost Water Gas," that being Mr. Little's title, is Mr. Little's line—The solid white line—for the Consolidated Gas Company's water gas cost as per Mr. Little Exhibit, and that included the cost of maintaining the 14th and 42nd Street plants as standby plants and included also the cost of gas storage at the various Manhattan stations applicable to the entire output of the Consolidated Gas Company. The lowest line, the broken white line, on this diagram, Mr. Little's line for Astoria water gas. The lines which are shown here in white are the lines of the Little Exhibit and are exactly the same. I have shown on the red line the Consolidated water gas cost, including the gas storage cost, at all the Manhattan Stations applicable to all of the sales of the Consolidated Gas Company excluding the cost of maintaining the 14th and 42nd Streets plants as standby plants down to October 30th or thereabouts, of 1923. I have, in the second place, shown as a solid yellow line the Manhattan water gas cost at the plants of the Consolidated Gas Company during 1922 and 1923 and four months of 1924, eliminating both the cost of the maintenance of the 14th [fol. 2933] and 42nd Street plants as standby plants and the cost of gas storage at the holder stations and governor houses and so on, in Manhattan. Finally, I have, as a

green line charted for comparative purposes the cost which was shown on my previous Exhibit, namely, the cost of Astoria water gas, computed at the prices paid for water gas-making materials at the Manhattan plants during that period. In other words, I have taken the Astoria actual water gas cost, which is Mr. Little's broken white line, and have adjusted that by using identical prices of material with those paid during the period in Manhattan. The variations of those lines have been charted month by month from January 1, 1922, through April of 1924, which was the same period used by Mr. Little. That shows for example, in one or two instances, on the adjusted basis, that the Astoria cost at certain times equalled and exceeded the Manhattan cost adjusted to a comparable basis, with the cost of maintaining the 14th and 42nd Street plants eliminated and the cost of gas storage applicable to all of the volume of gas sold by the Consolidated eliminated.

(Diagram received in evidence and marked Plaintiff's Exhibit No. 1026.)

I have prepared an exhibit which shows the actual production cost for this 28 months' period charted by Mr. Little, namely, from January 1, 1922, through April 30, 1924, in the first place of all of the gas made at the Astoria plant, its cost per thousand cubic feet, and in the second place the cost per thousand cubic feet in the same period [fol. 2934] for all the gas made in the Consolidated plants. This exhibit shows the actual cost of the various items as per books. In order to make the figures comparable, from the Astoria production cost has been eliminated the .02 of a cent for gas storage, and from the Consolidated production cost the 2.42 cents for gas storage at outlying holder stations in Manhattan concerning which I have previously testified, and also the cost of maintenance of the 14th and 42nd Streets plants as stand-by plants. I have eliminated from the production cost at the Consolidated plants during such portion of the period as there was any expense there incurred. I have eliminated from the Manhattan production cost the amount of rental paid to the City of New York for bulkheads, there being no corresponding item in the Astoria production cost, all of which is explained at the lower part of the exhibit. This exhibit is true and correct

on that basis, and these various items of production cost are classified as shown in the lefthand column, being the classifications that have been presented in previous exhibits, by the coal and water gas cost in the case of Astoria.

(Exhibit received in evidence, and marked Plaintiff's Exhibit No. 1027.)

This exhibit which has been received relates only to production cost and does not take into account any carrying charges on property or investment whatever. In this exhibit, at Astoria the cost of electric power house operating is $.0079, but there is no such figure at the Consolidated. On the face of Exhibit 1027, I have shown the production [fol. 2935] cost at the two plants without any adjustments in respect of differences of cost of materials. There are the actual according to the books. Neither of these columns contain return upon property or investment of the Consolidated or the Astoria Companies.

Referring to the request of the Special Master at page 10267 of the mimeographed record, I have prepared an exhibit consisting of five sheets entitled "Mr. A. S. B. Little's computation of production cost on basis assumed by him, corrected so as to give effect to actual present prices of material," and so forth. In this exhibit I have taken Mr. Little's figures in each of the houses at the Astoria plant and have assumed for illustration the basis which he used. I do not approve or accept any such basis. In other words, what I have done is the mathematical task of correcting his figures so as to show what they would be if the prices of materials which have been testified to here as the current prices for this period used by Mr. Little, namely, up to April 30, 1925, were adopted.

By the Master:

The letters at the right of the two columns indicate where there were changes made from Mr. Little's figures, and the notes at the right indicate the explanation of the changes.

By Mr. Ransom:

That is, I have taken these up house by house and in the first two columns I have shown the items of Mr. Little's ex-

hibits. The third column shows Mr. Little's exhibit corrected and then the explanation follows in the next column [fol. 2936] where I have indicated notes showing the correction made and the reasons for it with respect to such items as were changed to give effect to cost of materials. I have a summary sheet which corresponds to Sheet 14 of Mr. Little's exhibit—an estimated 1924-1925 cost of producing gas at the Astoria plant on the basis assumed by Mr. Little. I do not believe that any such thing could be done at the present time, but if any such thing were done as Mr. Little's exhibit showed, this would be the result if the actual present price of materials were used. That is, this shows his exhibit as it is and then corrected as indicated in the previous sheets. On the summary sheets I show first Mr. Little's exhibit, Sheet 14, by houses and then by the average and then Mr. Little's exhibit corrected as I have indicated, also the increased cost per thousand due to the added cost of producing mixed gas of not less than 650 B. t. u. at the present price of gas oil. It is based on my earlier exhibit in this case set out in the minutes of the hearing of May 6, 1924, corrected for the price of oil as of the present time, and these figures in this exhibit, as in the other exhibit, are per thousand cubic feet of gas made. That is, these figures as to the Astoria plant and as to the Consolidated plant, and these figures corrected to give effect in the manner that I have testified are the cost per thousand cubic feet of gas made and not the cost per thousand sold.

[fol. 2937] By the Master:

If Mr. Little said you could not operate the coal-gas plants if you were required to conform to 650 B. t. u.' my answer would be the same as Mr. Little's in that you could produce a 650 B. t. u. gas on low temperature distillation which would be very uneconomical and the gas would be of such character that it would be impossible for economical use of the gas. It would be possible to make the gas, but at a very high cost. Under the present method of high temperature carbonization, it could not be done.

(The computation was received in evidence and marked Plaintiff's Exhibit No. 1028.)

By Mr. Ransom:

As chief engineer of the Consolidated Gas Company I have in the course of my duties made a study of the question whether the 11th, 21st and 99th Street plants should be retired and the gas now made in those plants made at some other points, such as Astoria or Hunts Point and as a result of my studies it is my opinion, very decidedly, that such plants should be continued to be maintained and operated. I have made studies to ascertain what it would cost to install additional transfer mains and pumping facilities to deliver gas to the points in Manhattan where gas is now being furnished from those existing plants in Manhattan. It would be necessary to install additional transfer mains and pumping facilities in order to do any such thing, to the extent of $6,000,000. The present transfer and pumping facilities would not take care of the amount of gas that would be necessary to deliver into the districts now being furnished by these three Manhattan plants. As a matter [fol. 2938] of fact, the transfer lines now being used in those sections are being worked to practically full capacity in the winter months. I think in the interest of the consumers it would be very uneconomical to retire and amortize those three plants. I made computations to determine what would be involved as to added investment and expense due to the amortization of the present plants if any such retirement of the Manhattan plants were considered, with the result that I found that constructing new water gas plants at another point, the apparatus and material from 99th, 21st and 11th Streets to be used at this new plant, disposing of such real estate as could be disposed of, only maintaining the necessary land for holders and pumping stations, and amortizing the remaining property over a period of ten years, and with the new plant as built it would be necessary to make gas under the same conditions of prices for material and labor at 18 cents less than could be produced in those plants to break even. In other words, to make gas for 18 cents less there would be an added burden to the consumer in that the cost of the gas covering the investment, amortization, and so forth, would be a burden on the consumer. I assumed a ten-year period on the theory that the amortization should take effect within that length of

time and preferably sooner, for a shorter period of time, but taking a ten-year period of amortization it showed that gas would have to be made for 18 cents per thousand less [fol. 2939] at the new plant in order to break even on the proposition. That of course would be absolutely impossible. Taking into account both value of property required and differences in operating efficiency, that was after disposal of the property and giving effect to that on your capital account, giving effect to your reduction in taxes as a result of the disposition of this property, and taking all of those things into consideration, it showed that the gas must be made for 18 cents less. I do not believe there is 1½% difference in absolute efficiency between our different plants, taking into consideration the investment involved at each plant.

By the Master:

The real estate for the new plant was included in my estimate of 18 cents. The purchasing of real estate—that is, whatever the value of the real estate might be at Hunts Point or Astoria, wherever these plants were built, that would be part of their investment, after we had disposed of this property here where they are now located. Assuming that I erected it on the property I own at Astoria, it would make a difference in the real estate, whatever that amount would be. I am not sure now whether I included it, but I think when I made that estimate I assumed the plant would only take that on this basis—that of course if we built at Astoria or Hunts Point, or wherever it might be, we were simply occupying space which was going to cause us at an early date to go find another place in which [fol. 2940] to make gas. I based it on the value of the land occupied either at Astoria or Hunts Point.

By Mr. Ransom:

These were studies which I made in the regular course of business rather than in rate litigation matters. Assuming that we continued our Astoria plant as at present and assuming that we developed the Manhattan plants along the lines on which I have testified previously, so that we have both the Astoria and the Manhattan plants in

operation, at the present time I cannot see any possible chance of retiring those three Manhattan plants. Sometime it may come about at a later date, but I cannot see at the present moment how we could or should retire those properties. If we would not help ourselves, of course, if the City took them, they would be retired, but it would be expensive to the consumer, under any such conditions. Of course, the amortization would not be affected to that extent, in a situation of that kind. As long as conditions continue anything like now, I see no possibility of their retirement.

[fol. 2941] Referring to the testimony given in this case as to some of the streets and avenues in Manhattan as to parallel mains of the plaintiff company supplying gas to its consumers, from my knowledge of the requirements of the business and the operation of the system, of making and distributing gas, besides the mains and pressure being maintained, the plaintiff company does not have any excess of main capacity at this time.

By the Master:

I believe that Hunts Point plant will be practically fully developed in ten years as to full use of the land. If the rated sales continuing to grow at the rate which has been experienced during the last seven years, that development would be secured in less than ten years. I think that the analysis I put in will give all the information, but I will be glad to amplify it. For the time being, we figured that at least by 1945 we will have used up the entire capacity of the land. I showed the building plant at Hunts Point on the increased ratio of 7, 10 and 20 years. We believe that the 20 year period would cover it but how much less we do not know.

[fol. 2942] Colin C. Simpson, Jr., recalled on behalf of the plaintiff in rebuttal, testified as follows:

Direct examination by Mr. Ransom:

Referring to Mr. Little's direct examination where, at the instance of Mr. Donnelly, counsel for the defendant Attorney-General, he selected certain amounts from one of the

defendants' exhibits concerning which he derived some figures with respect to the cost of main laying in 1922 and 1923, the instances of those so stated being taken from main book No. 10, folio 1784, namely 417 feet of 6-inch main laid on Solarium Street. Solarium Street is on Blackwell's Island. This was a case in which a substantial part of the work, including all of the excavation and backfill, was done by municipal prisoners. I have the letter from Commissioner Coler which constituted the arrangement under which that was done. In other words, the work which was done and paid for by my company, and which appears in our books, was only the work of pipe laying and caulking. I would say that this job was not comparable in any way with the average Manhattan conditions in 1923 for main laying costs. We did not make any expenditures in this Solarium Street job for excavations or backfill or other [fol. 2943] unskilled labor work. Our superintendent supervised it and we furnished the men to lay the pipe and caulk the pipe.

There was not any alteration on any of the main maps relating to any of the measurements affecting the instances about which counsel for the plaintiff cross-examined Mr. Eddy. I personally checked over all of the instances which were to be brought to Mr. Eddy's attention and in none of those instances was there any alteration made in the map.

[fol. 2944] New York, July 30, 1924.

Jesse B. Snow, a witness in behalf of the defendants, recalled, testified as follows:

Cross-examination (continued) by Mr. Ransom:

At page 10161 of the mimeograph record, where I stated that, using the information in Mr. Davies' paper, and roughly estimating what I considered as the work in those days, and going through that bad ground, I estimated the cost of this tunnel at about three million dollars for the original cost, my estimate was just a rough construction cost with engineering. I mean by that field engineering and directing and planning the work. I calculated it to include

preliminary expense, making the plans, and all field engineering and direction of the work, designs, surveys and supervision during construction. I do not think I included interest during construction or any element of profits. I have not here anything from which I can tell. I just made a rough estimate and threw it away. I think that I made up preliminary investigation and exploration from figures as to the cost of excavation given in Mr. Davies' paper, and then roughly estimated going through the bad ground would cost so much money. And I think then I put on ten per cent for engineering. I did not have any intention to make my estimate of original cost comparable with the figures I have given here in my Exhibit 78. I just wanted to get at roughly what I thought the tunnel originally cost, but not bringing it up to a comparable figure with that which I gave in Exhibit 78. I do not think I omitted from my estimate of original cost any elements of cost that I have included in my Exhibit 78. I think I took the unit prices [fol. 2945] given in Mr. Davies' paper and worked those out by yardages and then added my twenty per cent profit and roughly estimated that it would cost a certain amount to go through the bad ground section, so many days at about so much a day. I threw away my details of this before Mr. Hewitt and Mr. Alrich called on me.

By the Master:

As a matter of fact, it does compare with my exhibit, covering practically the same ground.

By Mr. Ransom:

In preparing my Exhibit 78, I estimated that the salvage on the entire plant purchased for the construction of the tunnel and shaft would be about $177,000. That is the salvage that I have taken off from the first cost of the plant. Maybe I did give Mr. Alrich and Mr. Hewitt a figure of $201,000 for that salvage; I may have made a mistake in the totaling up here. I gave them a figure that I picked out from the various sheets here as what I figured salvage. I figure from my checking up, as near as I can here, $206,000. This figure is my estimate of the net salvage of the construction plant and equipment. The only thing I have in here for the cost of dismantling the construction plant and

equipment is $28,000. That includes cleaning up on the surface. I think that the cost of dismantling of the entire construction plant and equipment should be greater than that. I think I left out some labor which should have been put in. I think that it ought to be about $30,000 more. I never had personal responsibility for or knowledge of the [fol. 2946] job of selling off the construction plant and equipment after the completion of such a tunnel.

Redirect examination by Mr. Donnelly:

If I have not included enough money for gate-valves, pipe, stop-cocks and flanges in my estimate, the only item that would be affected would be the item for grouting.

By Mr. Ransom:

It would mean an additional sum for the item for grouting, which should be added if I have omitted it.

By Mr. Donnelly:

I have not included in my estimate all of the high pressure pipe and flanges as intimated as necessary to do that grouting. I made an estimate of that, and I would add for that item—I would increase the cost of my grouting 86 cents a barrel, which would amount to $21,072.

I just made a rough estimate of what I thought the original cost was for my own satisfaction. I was just curious to know just what the original tunnel cost was as far as I could find out. I did not work it out in detail at all. I just took figures given in Mr. Davies' paper and applied the quantities. I did not think it was of enough importance to spend very much time over it. A contractor will start cleaning up his plant as soon as he gets through with any special part of it and that will go into his general daily charges of his surface gang.

Recross-examination by Mr. Ransom:

I would add this sum that I stated as representing items in connection with dismantling cost that I did not provide for in my original estimate.

[fol. 2947] THOMAS J. CANNON, called as a witness in behalf of the plaintiff in rebuttal, testified as follows:

Direct examination by Mr. Ransom:

My occupation is that of messenger in the Department of Taxes and Assessments, in the Borough of Manhattan, City of New York. I have produced here the document called "Annual Record of Assessed Valuation of Real Estate, Borough of Manhattan, City of New York, 1924, Map 1, Section 2, Volume 2, Block- 356 to 383."

Upon consent of counsel, the following entry is read from the record produced by the witness:

Mr. Ransom: With respect to Block 369, The New York Mutual Gas Light Company is shown as the owner or occupant of Lots 10, 11, 12, 13, 14, and 15, and The City of New York is shown as the owner or occupant of Lot 16. What is meant is that there is a column headed "Owner or Occupant."

Mr. Donnelly: And underneath that appear certain notations, the first one being "The New York Mutual Gas Light Co.," and then, in red ink, "The City of New York."

Mr. Ransom: That is, "The City of New York" appears opposite the Lot No. 16, and "The New York Mutual Gas Light Company" appears opposite the other lot numbers that I mentioned.

[fol. 2948] By Mr. Ransom:

I have also produced here the block map of taxes and assessments of the City of New York prepared by the Board of Taxes and Assessments by its Commissioners and Surveyors, this being the block map labeled "Section 2, Volume 1, Blocks 316-383, Manhattan," and Sheet No. 41 is a part of such map.

(Sheet No. 41 received in evidence and marked Plaintiff's Exhibit No. 1029.)

HERBERT W. ALRICH, a witness in behalf of the plaintiff, recalled in rebuttal:

Redirect examination by Mr. Ransom:

Referring to my testimony yesterday with respect to certain buildings and structures which were located wholly or in part upon land comprised within the projected bed of Tompkins Street, I have produced here today two photographs in which appear the buildings and structures to which I referred yesterday.

(The witness proceeded to identify the buildings and structures on the photographs, which were received in evidence and marked, respectively, Plaintiff's Exhibit No. 1030, and Plaintiff's Exhibit No. 1031.)

[fol. 2949] HERBERT W. FERRIS, recalled as a witness in behalf of the plaintiff in rebuttal, testified:

Direct examination by Mr. Ransom:

I am connected with the Northeastern Construction Company, as I have previously testified. Mr. Burt is in Europe. I have, at the request of plaintiff's counsel, prepared a sheet which shows a comparison between the rates of pay of the labor used in my various building occupations between those existing on June 1, 1923, which were used by me and Mr. Burt in preparing my statement of reproduction cost of buildings and structures as of that date, and the rates of pay of labor which are now being paid, namely, those of July 25, 1924. These rates of pay which I have prepared are the rates of pay for the various classes of labor under union agreements, and they also are the rates which are ordinarily or at times being paid by the Northeastern Construction Company. In the case of the common laborer and hod carrier, the union rate prevails generally, and I might also add carpenter. In the case of the bricklayer and cement finisher, and plasterer, of course, as with the bricklayer, bonuses are very frequently paid due to local conditions. By that I mean that sums are paid in advance of this scale. The bonuses are additional moneys

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paid to the laborer above the union rate. Wages in excess of the union scale are commonly being offered by contractors in the form advertisements in the daily papers. I have, [fol. 2950] at the request of plaintiff's counsel, collated numbers of these ads as they appeared on different days during the month of July. On this sheet—the comparative cost of pay for labor between those existing on July 1, 1923, and July 25, 1924—I have shown the differences per day for the two dates in parallel columns with respect to the different classes of labor, and have calculated the percentage of increase for each of the classes of labor between those two dates. If I were asked questions with respect to these rates of pay, my testimony would be as set out on this sheet.

(Sheet received in evidence, and marked Plaintiff's Exhibit No. 1032.)

My collation of advertisements during the month of July, 1924, with respect to different classes of construction was taken from the morning edition of the New York *World* on the respective dates that I have shown.

(Sheet received in evidence and marked Plaintiff's Exhibit No. 1033.)

From my experience in the Northeastern Construction Company, the cost of construction of buildings and structures such as I have inventoried and appraised as of June 1, 1923, has increased slightly since that time.

Referring to Plaintiff's Exhibit No. 1032 with respect to the increases in the rates of pay of construction labor, we are now paying and have paid during the last couple of months more money to mechanics than we did a year ago, and we have paid at least the wages which I have set out in Plaintiff's Exhibit No. 1032. They are the minimum at the present time. At the present time, namely, in July of 1924, there is some recession in the prices of some or many materials which enter into the cost of building construction as compared with their prices as of June 1, 1923. From [fol. 2951] my experience, and as of the present time, labor has increased a greater percentage than the material has decreased during that period.

I have prepared at the request of plaintiff's counsel a comparison of the cost of the principal items of construc-

tion with respect to one of the buildings, selected at random, in one of the plants of the Consolidated Gas Company, to show illustratively how the thing works out as far as the decrease in the cost of materials and the increase in the cost of labor, and I took illustratively for that purpose the purifier house "D" at the 11th Street plant of the Consolidated Gas Company. With respect to major items of materials, I showed first the classes of work and the items and quantities and the unit cost in place and the total cost in place of those classes of work as I appraised them as of June 1, 1923. And then as details, I gave the unit price of labor and the total cost of labor and the unit cost of materials and the total cost of material as of June 1, 1923. And then I set out comparatively the similar class of work in the same building with the same quantities as of July 25, 1924, showing the unit cost in place and the total cost in place of those classes of work and materials in this building and then the unit price of labor and the total labor cost and the unit prices of materials and the total material cost as of July 25, 1924. The labor cost which I have included in this computation as of July 25, 1924, is taken on the same basis as the labor cost which I took as of June 1, 1923, [fol. 2952] namely, without including bonuses or payments over the union scale, so that my two computations are on the same basis, and my unit prices of materials are figured on the same basis as of June 1, 1923, except as such prices of materials have changed. I have taken the major items of such work, namely, concrete footings, common brick work, structural steel, lumber yellow pine and lumber spruce, and so forth, and have shown the increases in the labor cost and decreases in material cost—the way in which each has affected the cost in place, and, at the bottom of the sheet, in percentages, the net results of those changes since June 1, 1923, down to July 25, 1924. This purifier house happens to be a building in which there are substantial quantities of each of these major items that I have enumerated.

(Schedule received in evidence and marked Plaintiff's Exhibit No. 1034.)

[fol. 2953] GEORGE E. WOODS, a witness in behalf of the plaintiff, recalled in rebuttal.

Further direct examination by Mr. Ransom:

In compliance with a request made by the Special Master yesterday, I have produced here a statement showing a comparison with respect to the cost of carrying the properties represented by the manufacturing plants of the Consolidated Gas Company in Manhattan and the plant of the Astoria Light, Heat & Power Company at Astoria, in relation to the quantity of gas actually made at those plants during the period to which Mr. Little's estimate related. That comparison was made up on the investment basis with respect to the investment in the respective plants, and, in preparing this statement for presentation here, I have indicated the numbers of the exhibits in this case in which the same figures as to the investment are given, and have taken the investment as of December 31, 1921, and December 31, 1922, and December 31, 1923, in order to get an average investment for the period for comparative purposes. I have shown the investment in land and in plant separately. In some cases the Astoria plant is combined. In the first sheet, I show the facts as to the 11th Street property, and my figure of return on investment, on the average investment for Mr. Little's period, is at 8 per cent. Then I have shown the taxes on the respective properties during the period, as shown by the exhibits, the numbers of which I have indicated on this statement, for the two years, and for the four months of 1924 from the company's books, for 1924. I have done the same thing with respect to the 21st Street manufacturing plant and [fol. 2954] the 99th Street manufacturing plant. I made a summary which shows the carrying charges on the property, including the taxes on the property during the period, for the three Manhattan plants; then divided that by the quantity of gas made at those plants during the period, as per Plaintiff's Exhibit No. 1027. Thus I have computed the carrying charges at the three Manhattan plants in terms of cents per thousand cubic feet of gas made. That amount is 12.91 cents per thousand cubic feet of gas made.

I have similarly, with respect to the Astoria plant, ascertained the average investment during that period. I indi-

cated the numbers of exhibits in this case and the pages of such exhibits where those figures can be found and checked, and computed the return on that and added the taxes, then divided the total of the required return on investment and taxes during this period by the quantity of gas made at that plant, as per Plaintiff's Exhibit No. 1027. And that gives me as the carrying charge at the Astoria plant, 16.13 cents per thousand cubic feet of gas made at that plant during that period.

I then put on a final summary in which I indicated the difference between the Astoria cost and the cost at the three Manhattan plants of the Consolidated Gas Company, after giving effect to a return on investment and taxes on property devoted to the manufacture of gas. It shows the Astoria total cost to have been in excess of the Consolidated cost by .51 of a cent.

(Statement received in evidence and marked Plaintiff's Exhibit 1035.)

Referring to Plaintiff's Exhibit No. 1035, I have made a computation with respect to the relation between the pres- [fol. 2955] ent value of the land comprised in the three Manhattan plants, as testified to in this case by Mr. Stevens and the quantity of gas made in those plants during this period, and the present value of the land comprising the Astoria plant in relation to the total quantity of gas made at that plant during this period. The value of the land per thousand cubic feet of daily capacity of the Astoria plant as compared with the three Consolidated Gas Company plants on Manhattan is, for land, $65.22 per thousand cubic feet of daily capacity in the case of Astoria and $88.48 per thousand cubic feet of daily capacity in the case of the Consolidated Gas Company and the Manhattan water-gas plants. On the basis of the make during the period from January 1st, 1922, to April 30th, 1924, the value of the land per thousand cubic feet of gas made during that period is 31.51 cents per thousand feet in the case of Astoria and 60.92 cents in the case of the Consolidated Gas Company water-gas plants on Manhattan Island. So in relation to make, the present value of land, as testified to by Mr Stevens, is approximately 93 per cent more in Manhattan than in Astoria. That figure as to Astoria land and its

value is based upon including all of the lands at the Astoria plant aside from the portion which is allocated to the use of the Edison Company along Luyster Creek. That comparison includes all of the land in the three Manhattan plants.

[fol. 2956] Referring to the testimony produced in behalf of the defendant Attorney-General on the subject of drip oil, the drip oil is realized or recovered from plant holders, from the distribution holders throughout the city, and from the drips from the street mains throughout the city. The drip oil that is recovered from the street drips is taken for the shortest haul to deliver to any of the plants to which we can make the most convenient deliveries, so that it is taken into a manufacturing plant and included with the drip oil recovered from the holders in the plant. It is credited to the plant to which delivery has been made and that particular plant credits its production for the time being, and at the end of the year there is an allocation made and the drip is pro rated among all the plants in relation to the oil used during that period. That is done on my recommendation and approval. Some of them would get more drip oil in connection with the amount of gas made, and it was deemed proper to make an allocation in accordance with the amount of gas made. Drip oil is produced or realized in connection with the making of water gas, but not in making coal gas. At the end of the year this allocation was made on my recommendation, on a basis as to which I am a little bit in doubt, whether it is on the ratio of the sales or the amount of gas made, but they are credited with their proper per cent. I think the basis is the quantity of gas oil used in the particular plants but I cannot testify right now as to that. I have not here a copy of my memorandum or the memorandum which I approved as to the basis of that adjustment; I have not looked it up and I did not know that you were go-
[fol. 2957] ing to ask that question. I think, however, that your statement is right that it is based on the amount of gas oil used in each plant. So that, in stating the cost of production, the drip oil produced, as it enters into the accounts, has been apportioned between the plants on the relative amount of gas oil used by each plant. I will have to look up the question whether the cost of pumping drips is likewise adjusted between the companies on the same basis.

By the Master:

In the joint facilities reports there is no apportionment except as to gas manufacturing plants used and transfer mains and the Kingsbridge Holder. As I recall now, the 63rd Street Pumping Station is in there, representing a carrying charge, which is distributed between the Standard and the Consolidated, and there are some distributing mains of the Consolidated Company in The Bronx. There are no other gas storage facilities included, except the Kingsbridge Holder and the Pumping Station. That is, outside of the Kingsbridge Holder there is no allocation for holder capacity on the operation of the holder, aside from these two places. The distribution cost is pretty nearly the same in all companies.

By Mr. Ransom:

[fol. 2958] The holders are jointly used. The Standard Gas Light Company, for instance, has a 10,000,000 capacity at 63rd Street, which is sufficient for their entire requirements. The Consolidated Gas Company use a part of that and in turn allow them to use some at 111th Street. That same thing applies to the New Amsterdam Company. They all have their own holder requirements but for convenience and proper distribution one holder can be used for more than one company. When a portion of the holder is devoted to the use of a company which has not sufficient holder capacity of its own, then it is covered in the joint report. If it is a mere matter of exchanging between companies some holder capacity or pumping facilities, that is not treated as a matter for payment.

By the Master:

The companies have each sufficient holder capacity of their own with the exception of what I mentioned in my report, the New Amsterdam and the Northern Union.

[fol. 2959] FRANK H. NICKERSON, recalled as witness for the plaintiff in rebuttal.

Further direct examination by Mr. Ransom:

The exhibit number of the Teele exhibit which shows the amount of the 1923 real estate taxes on the land and plants and equipment which comprise the 14th and 42nd Streets gas plants, is Plaintiff's Exhibit No. 817. Those real estate taxes, of course, included both land unimproved and improved. The aggregate amount of both 14th Street and 42nd Street is $149,720.30. That is for the two plants. In the 1923 operating cost as summarized by Mr. Teele, 1923 taxes on the land at Hunts Point did not appear in the operating expenses of the plaintiff. The amount of the 1924 taxes on the Hunts Point land is $42,131.94. In the exhibit which I put in on rebuttal, which took my previous exhibits and made certain readjustments for the cost of materials to carry out the changed prices, I did not change the unit cost of taxes as stated, but I assumed that for 1924, the present year, the taxes would aggregate approximately the same amount. There have been increases in my assessments and taxes for the year 1924 as compared with 1923; the special franchise tax as to 1924 is $4,585 in excess of 1923. The Federal capital stock taxes exceed 1923 by $49,448. Other items of taxes are estimated on the basis on the six months' operation of 1924, the exact tax not yet being determined. The gross earnings tax for 1924 exceeds 1923 by $6,177. The excess dividends tax will exceed 1923 by $75,053; The Federal income tax will exceed 1923 to the extent of about $4,400. [fol. 2560] The real estate taxes for 1924 will be below 1923 to the extent of $126,476. That is due to the elimination of the 14th and 42nd Street land and plant and investments from the Consolidated Gas Company's real property assessment. And, upon the whole situation, with 14th Street and 42nd Street being eliminated, the 1924 taxes in the aggregate will exceed 1923 by $13,250. I did not make any change in my estimate of taxes, despite the elimination of the 14th and 42nd Street plants as to the taxable property at the end of 1923.

Cross-examination by Mr. Donnelly:

I gave no assessed valuation figures for 1924. I gave the real estate taxes on all of the land of the Consolidated Gas Company. That does not include Astoria. It eliminates the 14th and 42nd Street plants, land and improvements.

[fol. 2961] J. Vipond Davies, recalled as a witness in behalf of the plaintiff in rebuttal.

Direct examination by Mr. Ransom:

Referring to Plaintiff's Exhibit No. 836, which was my Exhibit in relation to the Astoria tunnel, and Defendants' Exhibit No. 78, which was Mr. Snow's estimated cost of reproduction, I prepared for convenience a schedule which shows in parallel columns, with respect to each of the numbered items, the cost of reproducing the Astoria tunnel, the amount at which I and Mr. Snow respectively estimated the cost of such items, and then I set out in a third column, the difference in dollars between the amount of my estimate and the amount of Mr. Snow's estimate for each such item.

(Statement received and marked Plaintiff's Exhibit No. 1036.)

I included the cost of the concrete for bulkhead and buttresses under the last item, which it not numbered, headed "Items Not Classified." The bulkheads and buttresses are different. There were six bulkheads built. The quantity of concrete in each of those bulkheads was approximately 17 cubic yards. The buttresses, there were scores and scores of them built. I do not know that any record was kept of the numbers of the buttresses. The cost of additional excavation representing tunnelling completely outside the net line or payment line of the tunnel is contained in my Exhibit in the same item, "Items Not Classified." The quantities in the schedules are absolutely the quantities measured to payment lines of the finished work and do not contain anything that is outside of the finished work. The amount and cost of concrete incidental

to the rock excavation extraneous to the tunnel heading comes also in that non-classified items list. I do not think [fol. 2962] my schedule of 6% for unclassified items was limited to any one item of reinforced iron. My recollection was that that was given as simply one illustration. There is approximately a thousand yards of excavation extraneous to the payment lines and that was filled ultimately with a thousand yards of concrete to fill the space.

Referring to page 9686 of the mimeographed record, where Mr. Snow, in explaining the reasons why he believed he could reproduce this tunnel for less than the figures which I have estimated, made the statement that I and those in charge of the actual construction of the tunnel did not get the diamond drills in the job and at work soon enough. So that delay and added expense developed, and to Mr. Snow's reference to the diagram which follows page 626 of my paper as the basis for such an inference, even though the provision of the text was to somewhat different effect, it is not true that we could have used diamond drills before they were used, and that they were not available soon enough. There was no delay whatever in the getting of the diamond drill just as soon as we wanted it and were ready for it. There was a machine ready here in New York that we got at once. I did not find anything on my plate 261, entitled "Method of Attack Through Zone of Bad Rock," that indicated that there was delay in the availability of the diamond drills, and there was, in fact, no delay whatever, when we wanted the drill, in getting the drill.

Such a method as Mr. Snow has stated, viz: that if he were now reproducing a tunnel such as the Astoria tunnel, at a closely parallel point in the East River, he would proceed upon the basis of the thorough exploration of the formation head by test drilling, and that thereby he would secure economies and improvement in method as compared with that which I followed and used as a basis for my exhibit, represents a difference in method from that which I actually followed only in degree. We commenced with the diamond drill in the expectation that the method Mr. Snow has outlined and indicated might be successful, and if it was [fol. 2963] proved that it could not be. We endeavored to use the diamond drill with the purpose of penetrating the measures and carrying out grouting, which was not suc-

cessful. We proved it to be quite impossible to do that grouting at long range. The fissures are so small that with the high grouting you have got to work at close quarters and close range in order to get any effect, and any such efforts would have involved, in my opinion, undoubtedly ten times the amount of drilling that was actually used in accomplishing the results. We tried in the early stages of the work the method of grouting through the first diamond drill holes. The diamond drill holes or long holes were the first holes we put in with the expectation and intention of grouting, and the result afterwards, as they were excavated, showed that the amount of grouting of any value from those holes was almost nothing, and we had thereafter to follow the method which we did use.

As to Mr. Snow's testimony that, in the construction of the Astoria tunnel, as he gathered from my paper before the Society of Civil Engineers, we did not have iron plates and segments for lining the Astoria tunnel ready and available as soon as they were needed and thereby expense and delay resulted, I will say there was no delay whatever at any time in getting the iron or steel lining for carrying on the method that was adopted and *and* that was carried to completion. The first section of the soft rock that was encountered we got through with local handling and treatment before we needed the iron plates at all, and the iron plates were ready before they were needed to be put in. [fol. 2964] We used the patterns and the segments that were left over from the Pennsylvania Railroad tunnel work and put them in and backed them up with concrete to bring them to the final diameter; so that there was no delay whatsoever; and the later steel was put in subsequent to a concrete lining having been put in first. There was an enlargement made in the concrete; so that there was no object in the steel plates coming. There was no delay whatever, therefore, in any part of the steel or iron plate lining. It was erected and put in as promptly as it could have been done.

As to Mr. Snow's statement, on examination, on page 9607 of the mimeographed record, as a part of the basis on which he prepared his estimate, which is Exhibit 78, that if he were building the Astoria Tunnel, he would take out the rock by the spoonful and would thus avoid some of the

dangers and hazards which proved expensive in the way in which the tunnel was actually built, as I understand Mr. Snow's method, he is going to take out the entire full section of the tunnel and put in at that time, as he takes it out, an iron lining, which is not the method at all that was carried out. That method of Mr. Snow I think is an impossible and impracticable method under the conditions that exist in that ground. All the rock, from one end to the other, is blocky and fissured and is very uncertain. The particular rock in this soft ground section—the bad rock section—was not safe to leave exposed on a large opening. Mr. Snow's method to excavate a portion and then put in a [fol. 2965] segment of a plate and then afterwards, by some unknown method, because I cannot see any possible way in which it can practically be done, to grout behind those plates to support the rock, is in my opinion, a quite impracticable method for the conditions as they exist. Furthermore, Mr. Snow by that means leaves the entire face of the whole section of the tunnel entirely exposed and unsupported and that also is introducing a hazard that is a very dangerous one, until the ground is certainly consolidated and certainly, with the long grout holes, using diamond drills, could never be certainly secured and safe for the leaving exposed of the full size face under a water pressure that is equivalent to about one hundred and twenty pounds to the square inch and a very poor rock that is not properly self-supporting.

There has been no substantial change or advance in the art of tunnelling under sub-aqueous conditions since the Astoria tunnel was built, that I know of in that line of the art since that date.

Referring to Mr. Snow's testimony, at page 9607 of the record, that he believed that the Astoria tunnel could be built or reproduced at a lesser cost than I have estimated if competent employees were had for the doing and supervision of the work, I would say that the engineer on that work—the resident engineer—is the resident engineer for Booth & Flynn on the building of the Vehicular Tunnel now. Two of the superintendents on Booth & Flynn's Vehicular Tunnel were in similar capacities on the Astoria Tunnel. The works manager on the Astoria Tunnel is now [fol. 2966] in charge of a very difficult piece of under-water

subway construction for the Hudson-Manhattan Railroad in Jersey City; and one of the superintendents who was on the Astoria work is now superintendent for Mr. Messiter on the Jersey City work.

I would like to say, your Honor, further that practically every man in any responsible position on that Astoria work had been in responsible work either on the Pennsylvania construction work or the Hudson-Manhattan construction work prior to going to the Astoria.

As to the similarity, if any, of the conditions of building the railroad tunnel in 32nd Street compared with that from Sixth to First Avenue, and the conditions existing in the Astoria Tunnel, I would say that no part of the 32nd Street tunnel exists below a depth at which air pressure can be used to carry out the work. The Astoria tunnel was carried out to a depth involving a hydrostatic pressure of 120 pounds per square inch. There was known to be fissures there and fissures between the gneiss and the dolomite which appeared in the Ravenswood tunnel. At that point also lower down the rock was found to be decomposed. That decomposition of the rocks may have extended down, but in the paper before the American Society of Civil Engineers, on pages 620 and 621, it is stated that even in the good ground sections the rock was so fissured and uncertain it was unsafe to do the tunneling without timbering and the method adopted was to put timber in and support the arch lining on it, and I understand in the other case, in the tunnel like the 32nd Street or the Pennsylvania tunnel, no lining and no timbering was needed. I am referring to that so-called good ground, the good rock section. There is [fol. 2967] that section particularly where there is always present the hazard of the high water pressure and those decomposed portions extending down within the zone of the tunnel. As a practical matter, you can separate and segregate the construction through the good rock section from the bad rock section; that has been done. The same hazards which arise in the bad rock section continue and extend over the job as a whole—the risks and hazards of the work is that of the work as a whole. The cross-section areas in the Astoria tunnel are somewhat larger than the rapid transit tunnels.

With reference to the following testimony of Mr. Snow concerning the work of construction on the railroad tunnel in East 32nd Street and the work of constructing the East River tunnel at Whitehall Street, Clark Street and 14th Street:

"Q. Would you say that that work was similar or entirely different?

"A. It was not what we called subaqueous work, but part of it was carried out below the mean high water.

"Q. Would you say that that work was similar or different from the work of excavating a tunnel under the East River?

"A. Very similar to excavating a rock tunnel under the East River."

I do not think in my judgment and from my experience it would have been practical or economical to undertake to proceed in the construction of the Astoria tunnel in the way indicated by Mr. Snow, from what I understand of the methods that he outlines. Certainly as to the bad ground section and as to the so-called sound rock section, he makes no provision whatever for timbering the arch of that tunnel prior to the enlargement and construction of the concrete support and there is no provision whatever for timbering that tunnel in advance of building the concrete lining. As [fol. 2968] I remember Mr. Snow's method it is by taking out the heading and enlarged by a bench and then lining that subsequently with concrete, and the amount of timberings that would be needed would involve extended excavation to allow the timbering and would involve replacing of the timber and the additional amount of concrete. At Mr. Snow's own unit figure, I estimate that the additional cost in good ground for putting in the timber would involve an amount of $564,000. I do not find any provision for that in Plaintiff's Exhibit No. 878.

My experience, gained from the sale of the Astoria materials, from the sale of the Hudson and Manhattan equipment materials and from the sale of the contractor's plants on the Hell Gate bridge, is that there is very little gained from the salvage of materials, except junk. As to Mr. Snow's elimination altogether from his estimate the item embodied in Defendants' Exhibit 78, the item of $462,917,

which I added, representing 6 per cent for items not classified, it is my belief, in that case, such elimination would leave various elements of cost not included in either unit prices or the quantities.

By the Master:

I did not, either in the quantities or the unit prices that were used, include a sufficient amount to round off the excavating beyond the payment end, as I recall it.

By Mr. Ransom:

I did not make any allowance outside of this $462,000 item for the excavation and concrete in bad ground outside of the line of the tunnel. I likewise included in that item the cost of the grouting pipes and their appurtenances. The grouting pipes, with valves, wedges and packing and so on for materials, run, at the prices then prevailing, about $40 [fol. 2969] a hole for the materials without counting the labor, and that would amount in the total number of holes to about $130,000—3,300 holes. That item includes timbering, wall plates and posts carried right through the entire normal rock section. That was all framed timber. That item also makes the only provision made for the cost of the concrete buttresses and the bulkheads to support the grouting pipes in poor ground. I figure that the various buttressing, including the fill of concrete, would have amounted to about $90,000. I covered in that item, and nowhere else, the cost of removing the concrete for the bulkheads. The items of the character referred to are not included anywhere else.

In this comparison between the two estimates, with respect to Item No. 3, excavation in shaft, rock below mean sea level, Mr. Snow's estimate was based upon a unit price of $25.24 per cubic yard, and my estimate uses a unit price of $40.50 per cubic yard. The money difference involved is $884,775.10. The figure of $25.24 per cubic yard is not sustained by the bids received for the shaft excavation of the Staten Island Narrows tunnel and the vehicular tunnel, because of the conditions of the hazards that are involved. In the case of Astoria there was fifty feet of soft sand and

ground within two hundred to three hundred feet of the water front alongside there that at any time might be required putting on air pressure. It was as likely as not that that might have to be made into an air pressure job in order to get down into the rock at all. Furthermore, there were [fol. 2970] difficulties and hazards all the way down of breaking the rock, with accompanying considerable ingress of water. My judgment was guided by the bids received for the shafts of the Vehicular tunnel and for the Staten Island-Narrows tunnel. The shafts compare with those at Astoria in that the rock is overlaid with a considerable depth of soft ground. They differ from the Astoria in the fact that the Astoria shafts are so deep that the use of compressed air becomes impossible. If the shafts had been of a depth comparable with those of the vehicular and Staten Island tunnels, it is certain that compressed air would have been used, because the compressed air method would have been considered the most economical. Under the circumstances, however, the contractor would be forced to assume, in making this, that he would have to make the excavation in the presence of water under high pressure. To take care of this, he would have either to pump or to use some slow and expensive sinking method. Under these conditions it was felt that by taking compressed air shaft rock excavation prices a minimum probable bid price would be obtained. The fact that no extreme difficulties from water were met has no bearing on the determination of this price, which is supposed to be that made by a contractor in advance of construction. In all this discussion it must never be forgotten that the geological structure on the line of this tunnel is one full of hazard. A broad band of limestone intervenes under the river and under the shore, between two zones of gneiss. The exact positions of these contacts were unknown before the work began and beyond the fact that these con- [fol. 2971] tacts would be certain to give rise to serious construction trouble, nothing was known about them, nor would more be known now and a responsible contractor bidding on this work would certainly take this into account. I took a price which I considered was suitable and adequate for the work and drew the comparison with the cost of the other work. Mr. Snow's estimate was on the basis of $25.24. The figure we used was $40.50 for the sinking of that shaft. I

checked it up and my recollection is that I testified that, in the original instance, as to what that comparison was, and I used that figure in spite of the fact that the Astoria shaft went to a greater depth.

With respect to this Item No. 4, excavation tunnel, rock, Mr. Snow's estimate uses $19.93 per cubic yard. I would use a unit price of $43 per cubic yard. The money difference involved is $1,462,522.65 or 48 per cent of the total discrepancy between the two items. On the basis of actual contract bids in and near New York City, I do not think this unit price of $19.93 per cubic yard could be sustained. I think that the figure for that work, under the conditions existing, was an utterly impossible figure at which to carry out that work. Mr. Snow's figure appears to have been made as though it were work that had been brought right up on the surface and carried out under surface conditions and eliminated all the hazards and risks of that work and with no adequate figure whatever to provide for any timbering which is stated in Society's paper on pages 620 and 621 as being absolutely necessary to timber that tunnel, and there is no provision for any timbering. As illustrated [fol. 2972] there the T. A. Gillespie Company took two contracts for the New York State tunnel within a short time of each other and the unit prices for the land section and for the river section were almost exactly one-half one of the other; that is, the Hudson River syphon section, his bid price was $17.50 a yard while the Rondout section averaged $8.77. That is all in relation to excavation. I feel that the price of $19 and some odd cents that Mr. Snow gave—$19.93 which Mr. Snow estimated, is quite inadequate for the purpose of carrying out even the normal rock section of that work, and would not apply to rock under excavation under water and at depths where you could not use compressed air, that is the condition there. Taking the price of this contract of the Gillespie and raising it to the June, 1923, level price, it would be higher than the figure that we used.

With respect to the Hudson River syphon section under Contract No. 90 of the Catskill Water Supply, before that contract was awarded, diamond drill borings had been made completely from side to side of the river intersecting each other, so that the entire length of the tunnel were ex-

plored before the contract was awarded. There was known to be granite, or rock of that character.

With respect to Item No. 7, concrete, tunnel, sound ground, Mr. Snow's estimate uses a price of $24.04 per cubic yard as compared with my unit price of $32 per cubic yard. The money difference involved is $162,655.20. On the basis of actual contract bids for similar work in and [fol. 2973] near New York City, I do not think a unit price of $25.04 per cubic yard could be sustained. Similarly in the Hudson syphon tunnels the price for concrete had in addition to it items for making and using forms and the average price pre-war of that work was $14.67 for the concrete and the form work, which on an equality or bringing it up to the June, 1923, price level would mean a price of $32.37 per cubic yard, and I think the dollar figure is the figure that is more nearly representing the actual costs. The relation in the price of cement between 1911 and 1923 for that work is somewhat more than double. The labor on most of that work was trebled since that period.

Now, with respect to Item No. 12, Grout, tunnel, high-pressure, Mr. Snow's estimate uses $21.67 per barrel of cement used. My estimate uses a unit price of $43 per barrel of cement used. The money difference involved is $370,288.80. Mr. Snow testified that it was practicable to use the same unit price for high-pressure as for low-pressure grouting; this is utterly inadequate. From experience it has been found that the labor of low-pressure grouting amounts to some 14.3 per cent of the total cost and that the labor required for high-pressure grouting is fifteen times that for low-pressure grouting. Grouting does not mean only blowing in grout but the work of making the connections and all other necessary work as well, except drilling the holes. In the Catskill Aqueduct the cost of grouting, not including the cost of the drilling nor of the steel pipe, [fol. 2974] amounted to $14.15 per barrel at the 1923 price level. This is for low pressure work. In low-pressure grouting, about 14.13 per cent of the total cost may be regarded as generally representing the cost of the labor element. The record, as I find it, is that the Catskill Aqueduct, for low-pressure work was $14.15 for grouting, not including the cost of the drilling or of the steel pipes. On that basis the total high-pressure grouting per barrel cement

used would represent about $43 a barrel. That is, if 14.3 per cent of the $14.15 price was labor, the labor per barrel in grouting used would be $2.03, and the material item would be $12.12. So that if you establish a ratio that I have indicated between the cost of high-pressure and low-pressure, my figure would be $42.57, using the records on the high-pressure on the Aqueduct and the low-pressure on the Pennsylvania tunnel.

With respect to items Nos. 20 and 20-A, referring to test holes, Mr. Snow's estimate was $20 per linear foot, 1,500 feet of diamond drill holes and $15.26 per linear foot for 43,300 linear feet of percussion drill holes. The money difference involved is $205,242. From my judgment and experience, I think it would not be practicable to make any lower price for the larger and shorter holes to be drilled by percussion drills than for the longer and smaller holes to be drilled by the diamond drills. A large percentage of the cost of drilling in any case is due to the set-up—establishing your machine and setting up. The wear on diamond [fol. 2975] drills is extremely small with that character of soft rock, and I think that the diamond drill holes would be at least as cheap or cheaper than the percussion drill holes of larger size. So if Mr. Snow took my price for diamond drill holes, I would say he should not take a lower price for the percussion drill holes. As to the relative depth of the diamond drill holes as compared with the percussion drill holes, the diamond drill holes are about 88 feet, and the average depth of the percussion drill holes, say about 13 feet. Other things being equal, the longer the hole the lower would be the cost per foot of hole. Of course the difference is that the diamond drill hole is adapted to long drill holes and the percussion drill hole has a limit of about 20 feet.

I think it is very risky to assume, as Mr. Snow testified he did as a part of the basis for his Defendants' Exhibit No. 78, that, if another tunnel like the Astoria tunnel were to be built at about the same point and parallel to it, you could reasonably depend on encountering the same rock an subaqueous conditions, and in fact an improper assumption, because I think a few feet away you are liable to get a totally different state of conditions. In fact, carrying on work on the same location, it is quite possible to

get over-shooting at any particular location and disclose fissures or trouble that had not existed in the first instance. Such an assumption was not a safe basis to make an estimate for reproduction under absolutely the conditions that were met in the first case, without allowance for hazards and emergencies occurring.

Preliminary cross-examination by Mr. Donnelly:

I made an affidavit on the 12th day of May, 1920, in the case in this Court entitled "East River Gas Company of Long Island City, Plaintiff, against Charles D. Newton and others."

(Received in evidence and marked Defendants' Exhibit No. 113.)

Redirect examination by Mr. Ransom:

[fol. 2976] I do not know whether this affidavit, which was submitted in the 1920 litigation, included an estimate of reproduction cost as of January 1st, 1914, and an estimate of reproduction cost as of that date, which is stated as October 19, 1919, but which I take it was October 1st, 1919; it is whatever is in there. I stated that the foregoing estimates included amounts representing field engineering and construction of the work but included no other work such as interest during construction and the like. I said then that the 1914 reproduction cost of the Astoria tunnel of $3,217,798 represents the actual cost of the tunnel and includes labor and materials and field engineering, and excluded those items which I stated in the preceding paragraph were excluded. This figure of $3,217,798 was the figure for the actual disbursements for plant and construction work, materials and labor to the date, but did not include any payments to us as engineers, or preliminary expenses, interest during construction, taxes, insurance, accidents and damage, materials, labor and supplies, superintendence, field clerks, and so forth, nor any part of the overhead of the Astoria Light, Heat & Power Company. This figure does not include the cost of the mains laid in the tunnel, the cost of head houses, permanent lighting, permanent pumping equipment, elevators, shaft equipment, the tracks and runways in the

tunnel, nor any other equipment or incidental construction added subsequently to the construction period. I did include the field accounting, and the field engineering, and the field superintendence of the work. That is, that in-
[fol. 2977] cluded an amount for those salaries over and above the actual cost, on which I was paid a commission. It did not include any additions subsequent to the construction period, to our connection with the construction work.

[fol. 2978] H. M. BRUNDAGE recalled in behalf of the plaintiff in rebuttal.

Direct examination by Mr. Ransom:

I have as an officer of the Astoria Light, Heat & Power Company, prepared from its books and records a statement which shows the details of the cost of the Astoria tunnel, exclusive of mains, equipment, head houses, and so forth, to August 31, 1916. It shows both the details of the actual construction costs for the contract work and the other disbursements and also the amount of the salvage realized. The cost of building the Astoria tunnel was initially paid by the Astoria Company, and then billed to the East River Company, and capitalized by the East River Company. This statement is a true and correct one according to the books and records of the Astoria Light, Heat & Power Company in evidence. I have added as a footnote a statement showing the aggregate investment to June 1st, 1923, in the tunnel. The total amount of salvage realized on the construction, plant and equipment was $24,343.42.

By Mr. Donnelly:

These figures were all taken off from the books of the Astoria Light, Heat & Power Company. I kept the books at one time. I haven't any engineering knowledge except that gained from keeping the books. For instance, take this item of $352,097.26. All my information as to that is derived from the books, and the supporting data and voucher, and by the engineers' reports. I have nothing to do with building. $24,343.42 is the amount received for

salvage. I got that information from bills rendered by people who took the scrap away. I am unable to say from [fol. 2979] memory who they were. That is all a matter of record and the books are in evidence. I know that the railroad tracks were laid there. I actually saw them and saw the equipment in the shape of cars that handled the excavated material, and I got the vouchers and receipts for that. I believe that the railroad and equipment was used for the disposal of the excavated material. I do not happen to know whether the material was disposed of. I am unable to state, from memory just what the item, rentals, $48,432.94 under "Total Shaft, Bronx End," was. That is an item of record in the books of account.

(Statement received in evidence and marked Plaintiff's Exhibit No. 1037.)

I do not know whether or not the figures that I set forth on this paper that I submitted and which is now marked Plaintiff's Exhibit No. 1037 agree with the figures contained in Mr. Woods' general facilities report. It is all a matter of record. Those are the figures only to August 30, 1916. I might also say that the amount here deals with the tunnel proper only. If Mr. Woods gave a figure purporting to be a book cost, he used it as of December 31st, 1922, and later as of December 31st, 1923, which would include not only the figures you have there but the figures not included in that list. So my figures would not necessarily agree with his; his would be higher.

By Mr. Ransom:

This represents the cost of the tunnel proper. In addition to that, the tunnel had certain equipment, and that was all included in the bill against the East River Company.

By the Master:

This exhibit is not supposed to include equipment in the tunnel, and I have so stated in the heading. I want to make it very clear that is the tunnel itself. Mr. Woods' report also included that, brought down to the date of his report.

[fol. 2980] New York, July 31, 1924.

Met pursuant to adjournment.

J. Vipond Davies a witness in behalf of the plaintiff in rebuttal, resumed the stand.

Cross-examination by Mr. Donnelly:

The cost of concrete for bulkheads and buttresses is included in Exhibit 836 under Items Not Classified; also additional excavation representing tunneling completely outside the net lines under the same item; also the cost of concrete incidental to rock excavation extraneous to tunnel heading, do not aggregate $463,000. It is not a fact that in City contracts the cost of these items would be included in the unit prices bid for the various classes of work. That item is figured at six per cent in the estimate of the classified items, but I stated or intended to state that those items were items which would come within the scope of that list of unclassified items, that the work involved in those would be within the scope of that not classified account. In City contracts and in practically all public contracts there are enormous numbers of items classified. In all the City contracts there are items for timber, there are items for concrete wherever used, and any work such as that in a piece of work of this kind would not come within the ordinary scope of the unit prices for the unit materials of excavation and concrete in the finished tunnel. I am generally familiar with City contracts for tunnel work. I will not tell the Master of any City contracts where tunnel bulkheads, buttresses, excavation outside of net lines, were paid for outside of a separate unit prices, because I know of no such contract where such things have been necessary in the sections of the work. I do not think these things would be included in the unit prices. I think in a City contract the contractor would be able to avoid the contract on account of the [fol. 2981] perilous condition of the soil, not being what it was anticipated to be.

In preparing my exhibit 836 I checked my costs against bid prices made for doing similar work on similar contracts. The usual practice among contractors in making a bid is:

A contractor will check his prices in any way that he is able to, from any source of information he can get which might guide him in any such statement. So far as the specifications and plans show, the conditions differed, and for that allowance would be made, naturally. These days, if I were preparing an estimate for a contractor, I certainly would make it in the same way as I have prepared Exhibit 836, using equating values of the *Engineering News*. If I were preparing an estimate for a contractor to bid on a piece of work, I might or might not analyze generally office, expense, overhead, superintendence, surface labor, tunnel labor, liability insurance, bond premium, plant explosives, disposal of materials, depending on what the work was and what the particular experience was which might guide me as to that particular work. If I had extensive personal experience I would not go into that detail. My experience with the character of work is quite extensive. That is why I would not have to go into all that detail in submitting a bid for a contractor. A contractor in estimating work will set up his analysis of his costs in various ways. If he has experience in the particular line of work he sets it up in aggregate without going into the detail of the items that plaintiff's counsel indicates.

Printed page 662, which is Table 9—Unit Costs of Tunnel Construction—Normal Conditions, of my paper that [fol. 2982] was read before the American Society of Civil Engineers, is a method in which the accounts are distributed as of that time. Under Table 9 I have set forth quite a number of items beginning General Supervision and running along with Engineering Expense, Field Office Administration, Plant and Equipment, etc. We kept unit costs by distributing them in that way so far as the actual construction occurred, by distribution to different accounts, and which method is set forth in the pages of my paper above. I didn't use the same method in my reproduction estimate as given in Exhibit 836, because there was no need to go into that detail, and since the date of that construction the conditions of carrying out work have changed very materially. In making my reproduction estimates I have arrived at this, at the figures I testified to, by my judgment of what the units were worth under present conditions and with the quantities that had been arrived at in the original

instance. Not that I had ever used those subdivisions of the units in any way. In reproducing this tunnel I did not use the same methods of distributing the items of every piece of work, that I employed in the original construction, but I applied the prevailing prices, as of June 1, 1923. The physical methods of carrying out the work were the same. I did not use the same quantity of labor as was used in the original construction of the tunnel. I stated that I did not go into the items of distribution or subdivision of labor, materials, overhead, or plant, but arrived at what I understood and believed to be a fair value for the unit quantities entering into the work. In giving my reproduction estimates I used a different method of computing the amounts than as [fol. 2983] shown in those unit tables. Those unit tables I stated then were not complete, they did not represent all the matters that went into the construction. So that they were not usable in that form. The correct way of estimating the costs of work is not necessarily to analyze and detail the administration, plant, labor and materials. In the ultimate analysis it might go back to that, but that is a matter of experience of the man who is using them. In the ultimate analysis the method whereby the contractor would know the probable cost to him of doing the work and his anticipated profits would go back to what he found was the cost of carrying out his work that he is figuring on. What figures he makes would not be dependent individually and separately upon the particular items of his experience, but would be modified according to the grouping. But of course in the ultimate analysis it goes back to what labor, material and plant that enters into the cost of the work are represented by the bid that he puts in or the reproduction value. I estimated that there was represented there an amount equal to anticipated profit of twenty per cent. If a contractor were asked to look over my method he would have to have my mind, my knowledge and my point of view, to be able to arrive at the same conclusion, that there would be a profit of twenty per cent by the method that I have described for doing that work. He might desire analysis in detail of the administration, the plant, the labor and the material, but he would have to depend on my judgment in the matter. My judgment would be represented by my ultimate analysis of those details in order to give him an

intelligent idea as to whether or not my estimate of twenty [fol. 2984] per cent of contractor's profits had been correctly arrived at.

I testified that the method that I understood was outlined by Mr. Snow, of building the iron lining at the time the excavation was made and supporting the roof arch, is impracticable. I have used that method in carrying out tunnel excavation, many thousands of feet of it on the Hudson Manhattan Railroad construction, where we were compelled to put in the lining without attempting to support it, and later grouted it. I recall, at the bottom of page 10446, and running over into the following page of the mimeograph copy of the minutes, I stated in answer to a question put to me by plaintiff's counsel, "No," referring to Mr. Snow "makes no provision whatever for timbering the arch of the tunnel prior to enlargement and construction of the concrete support, and there is no provision for timbering that tunnel in advance of building the concrete lining," but I do not know where the testimony is. That was my understanding of the method that he had computed by, and certainly there is no indication either in prices or anywhere else for any such thing as frame timber any place to take care of the arch lining. I only read a portion of Mr. Snow's testimony given here before the Special Master. I did not read it all, and when I was asked this question by plaintiff's counsel, I relied on the fact that he was quoting Mr. Snow correctly.

The placing of the concrete lining while the heading is being advanced, is the way it was done, and putting the plates and posts to carry the arch line, and subsequently putting the side walls and invert after the material had been removed, but that is not the normal way or the usual way. It is a most unusual manner of doing the work. It would [fol. 2985] be more costly. That was the method used by me to excavate for five days and concrete for one and a half days, follow the excavation of the heading with the arch concrete so as to attach it up and make it secure. It is possible for Mr. Snow to carry out the work in the same manner, but his unit prices do not indicate to me that it is possible for him to do it.

On page 10447 of the mimeographed copy of the record I testified:

"As I remember Mr. Snow's method, it is by taking out the heading and enlarging the bench, and then lining that subsequently with concrete, and the amount of timberings that would be needed *would be needed* would involve extended excavation to allow the timbering and would involve replacing of the timber and the additional amount of concrete of Mr. Snow's own figure, and I estimate that the additional cost in good ground for putting in the timber would involve an amount of $564,000."

Practically all of this timber could not be used many times. It would have to stay in there and stay there permanently, because it is not usual or profitable to take it out. Fragments of it, possibly, could be used more than once. In carrying out open subway excavation, timbering is used many times but not in tunnel work where the work is not through good rock. This is not good rock; that is the point. If concrete lining follows excavation that method [fol. 2986] does not remove the excess excavation which I have included in my estimate of $564,000. Whenever timbering is put in there are two payment lines established and the excavation is taken out behind the payment lines, behind the timbering. The timber has to have space behind the neat lines. Therefore the timber is put in place and ultimately the concrete is to fill in between the timbers, back to the new payment line. The payment lines shifts from time to time. That is so in all cases. I have a photograph illustrating it. That applies to City contracts, too, it applies to contracts wherever timbering is ordered in by engineers to support the section in advance of the new payment line. The timber is paid for and the concrete is paid for. Under conditions where timbering is used, where timbering is ordered, the payment line is increased. It is usual in contracts to have two payment lines, and if timbering is needed the engineer orders it in. There might be one, two, three, four or five or an indefinite number of payment lines if the engineer ordered it. Every contract gives the engineer that power. Practically aside from the contract itself. On the contract for the Whitehall-Montague Street tunnel job I do not think they put in any timber permanently in that work. It may have been temporary timbering. I knew about it, of my own knowledge.

The salvage value of every contractors' plant is very

commonly junk value. My allowance of 41 per cent as the salvage value of the plants as a credit to my cost as given in Tables 8 and 9, contained in my paper prepared for the American Society of Civil Engineers at page 661 thereof, was simply based on the assumption that there might be that. As a matter of fact, there was only $24,000 obtained for the entire plant on the Astoria tunnel. I got that [fol. 2987] information from the company's records. I do not know, on the basis of my tables, that Mr. Snow's estimate of $200,000 is only a part of the value of the plant. After the completion of the Astoria tunnel, some boilers of the plant were sold. A good deal of the plant was burned up, by accident subsequent to the work being completed, but the bulk of the plant was on the ground for years afterwards, with a man trying to sell it, and he sold portions at one time or other. The contractors in preparing bids sometimes assume a salvage value of the plant. A great many contractors I know consider a plant as having no salvage value. What they get after that is velvet to them. There was no net cost of the plant set up in my reproduction estimate, Plaintiff's Exhibit No. 836. It was all absorbed and taken care of in the other items. I knew that the compressors, motors, hydraulic plant, derricks, cars, locomotives and so forth used in the construction of the Whitehall-Montague and Old Slip Clark street Tunnels were also used in the construction of the 14th Street Tunnels and some of the compressors and a hydraulic plant is now being used in the Vehicular Tunnel, because the same contractor took the first, second and third contracts, and he used it on the other contracts, but that is unusual. It is most unusual for a contractor to get three jobs running like that.

At page 10449 of the mimeographed copy of the record I testified as follows:

"The grouting pipes, with valves, wedges and packing and so on for materials, run at the prices then prevailing about $40 a hole for the materials without counting the labor.

"Q. And that would amount in the total number of holes to about how much?

"A. About $130,000—3,300 holes."

[fol. 2988] This $40 per hole is for the extra heavy length of pipe that is inserted in a 6 inch drill hole, the rope packing, the bagging that is put around it, the steel fox wedges that are driven to hold it in the ground, two pairs of flanges, a 4 inch extra heavy gate valve, and an extra heavy steel nipple and a plug cock on the outside. I forgot what the prices were I assumed for the valves, I had the memorandum in my office. With reference to the plug cocks and flanges, I think the valves were something over $20 out of the total. The valve is the principal cost. I have not got the figures with me. I would not like to state from memory. We did not have 3,300 valves and 9,000 flanges in exposed holes at one time. The maximum number of holes that we were carrying at any time was probably twenty or thirty at each end. When you get up to fifteen or twenty you have got the heading jammed full of pipes. The gate valves were used over possibly two or three times. When they came out they were full of grout and the length of pipe came out shattered with the rock, so they were practically useless, but a portion of the flanges and a portion of the gate valves and a larger number of the plug cocks were used over again. We could not charge for grouting operations at $40 for every hole. I would not have to revise the cost in my estimate as given on page 10449. The question was not asked me how many were used. I do not know how many were used. It was not equal to $100,000 worth. These items were used more than once so there would have to be a revision of my estimate. Of course, there is an extra expense in the work of cleaning. It is not a fact that the cost of my [fol. 2989] item that I have included in my unit price as shown on Item 12 should be revised accordingly because that was intended simply for the grouting operation itself after the pipe was put in place, just as on the Hudson syphon there were separated units for the drilling and the steel pipe and for the grouting. I have the item altogether.

On page 10454 of the mimeographed copy of the minutes where I stated: "I feel that the price of nineteen dollars and some odd cents that Mr. Snow gave—$19.93 which Mr. Snow estimated, is quite inadequte for the purpose of carrying out even the normal rock section of that work," I made no figures in the detail to show just where Mr. Snow is wrong, but when you compare it with the fact that, before the work

on the Catskill Aqueduct, $17.50 was paid for perfectly good rock, that did not need any timbering or support of any sort, and Mr. Snow has admittedly, I believe, included the support of that fissure and jointed roof in his unit price, it is obvious that the price of 1915 is inadequate. I think Mr. Snow's estimate was based on the theory that the rock was absolutely sound and secure and not under the river and not subject to any hazards or difficulties, but as though the tunnel had been moved out from there and put somewheres else. In this case, this American Society of Civil Engineers pamphlet, on pages 620 and 621, calls attention to the character of what was called good ground, but which — very loose and disjointed, roof that was liable at any time *would* fall in, and for the safety of the men, it was necessary that it be timbered. My criticism of Mr. Snow is that he assumed the conditions that I have just described and I fail to see [fol. 2990] any other conditions that could be assumed, and if I am wrong in my assumption of what Mr. Snow took, it follows that I am wrong in my critic-sm. I would not go so far as to say that, I might be wrong.

In making up my estimate, Plaintiff's Exhibit No. 836, I did not assume a number of men on the gang at all. In respect, to the number of men on the low-pressure grout gang, I took the records, as I have stated, of the Board of Water Supply as to grouting at high pressure and low pressure and partly from the Pennsylvania Railroad's records as to the distribution costs on the low pressure grouting, and using these together, I arrived at my figures and I was not taking the number of the men of the gang. With reference to the number of men included among the various classes of labor that performed this work, I did not make any assumption. When the extra men in the grout gang were grouting they were doing that exclusively, and doing nothing else. They may have been fellows on the heading at other times. I did not testify that there were more men for the high pressure grouting than low pressure. I stated that the cost of labor for high pressure per barrel of cement was fifteen times what the cost for low pressure grouting was. I did not testify that there were more men doing high pressure grouting than doing low pressure. There may be more or less. It is related to the barrel of cement.

Redirect examination by Mr. Ransom:

My paper before the American Society of Civil Engineers was presented at the meeting of October 6th, 1915, but written quite a while prior to that. Referring to my testimony at page 10,449 of the mimeograph record, to the [fol. 2991] figure of $130,000, which was the multiplication of $40 a hole for grouting equipment by the total number of holes, and to my statement that this should be revised downward, that observation related to the figure of $130,000. As to attempted economy by the using over the valves and the like, the removing of cement and the repairing of breakages, I answered it, I think, by stating that to use these over again, they had to be sent up on top and chipped, and there was labor involved in cleaning them, and a certain number were broken.

By the Master:

The $133,000 was given in answering a specific question. I never claimed and never asserted that in that figure of $433,000 there was $133,000 for that item alone. I think the figure that was represented that we had put down was about $80,000 as the total cost of all the valves and all the pipes that we used, but I answered a specific question by Judge Ransom. I did not intend to state that in the $400,000 and odd allotted to unclassified items there was included an item of $130,000 and odd; included was an item of about $80,000 for that item, as to which Judge Ransom asked me a question about the original cost, many gates and valves, which was answered.

By Mr. Ransom:

I answered about a lot of other items that were included in it, as to some of which I gave prices and as to some of which I did not.

Recross-examination by Mr. Donnelly:

I have no data by which I am able to segregate the sum of $80,000 as sufficient to cover this item of piping, flanges, etc., and I cannot tell you how I make up my entire $430,000 as my six per cent for unclassified items. I stated a lot of

items that were represented in that item of unclassified [fol. 2992] items, but I could not assign to each one of them a specific sum of money. My inability to do that is not due to the fact that I have not got my data here. In other words, I have no data by which I could assign to each of the items that make up this four hundred and some odd thousand dollars which is my estimate for unclassified items, amounts which make up a particular sum of money as an individual sum to make up that exact total. The estimate was based on a six per cent allowance for unclassified items. I have stated that over and over again and I gave items that aggregated over $400,000—I gave plaintiff's counsel in response to questions items that aggregated something over $400,000 as being items that properly would be in that item. I did not assign to each individual item a particular sum of money, the aggregate of which would make up that $400,000 and some odd. My method was to take six per cent of some other figure in order to arrive at that figure of $400,000 and some odd.

By Mr. Ransom:

I did testify to various items here yesterday which aggregated about $400,000, included within the $460,000, and I gave definite figures as to those.

By Mr. Donnelly:

But those items that I testified to included $80,000 for flanges and pipes and so on.

[fol. 2993] New York, August 1, 1924.

Met pursuant to adjournment.

COLLOQUY BETWEEN MASTER AND COUNSEL

Mr. Donnelly: If the Master pleases, the defendant Attorney-General rests, and I now renew the motions to dismiss the complaint, which were made by me at the opening of the plaintiff's case and at the close of the plaintiff's case.

Mr. Murphy: The Public Service Commission renews all the motions that it has heretofore made in this case, and that motion, I take it, is denied.

The Master: Those motions I will take with the case.

Mr. Murphy: And the Public Service Commission moves to strike out all the evidence and testimony in this case relating to the Hunts Point property; it also moves to strike out all the evidence and testimony taken in this case in relation to the Cromwell Avenue and Exterior Street property, being Block 2497, and takes an exception.

Mr. Donnelly: I think, if the Master pleases, with reference to those motions that Mr. Murphy has just made, the exceptions taken by the defendant Attorney General dur- [fol. 2994] ing the progress of the trial sufficiently raise the questions.

The plaintiff rests.

The Master: Then the testimony is closed and the briefs are to be exchanged on September 10th and the final briefs filed on September 20th.

Mr. Ransom: It is stipulated by the defendants as well as by the plaintiffs that none of the witnesses called by either side need sign their testimony.

Mr. Donnelly: I will agree to stipulate that, with the understanding that if either party finds any corrections to be made—I assume most of them will not be vital—they may be noted in the record, or that we may be able to have those things noted.

The Master: The same ruling will be made there. I will take the matter of the weight to be given to it into consideration.

Mr. Murphy: We take exceptions to the rulings.

Mr. Donnelly: I understand that you take the motions to dismiss which have been made and the motions to strike out the case, and that you will announce your rulings in the report and findings.

The Master: The motions to dismiss I suppose will have to go to the District Court. The other motions will follow the determination of the questions in the case.

Mr. Ransom: Of course there are a number of questions which I might raise by motions to strike out portions of the record, and I think it is just as well to leave them all to be determined by your Honor's ruling as to materiality and relevancy. Of course, I shall make no motions to that end.

The Master: I assume that the usual stipulations as to [fol. 2995] the filing of the exhibits and the testimony are

made, and that the report when made will be filed along with the testimony and exhibits.

Mr. Donnelly: With regard to the time set by the Master for the exchange and the filing of the final briefs, if it should be found that either party finds itself unable to comply strictly with that ruling I assume that either party may have a few days extension.

The Master: I won't foreclose you in the matter of the filing of the briefs, and you may apply for it then.

Mr. Donnelly: I will assure the Master that an honest attempt will be made to comply with your Honor's ruling as to the time within which briefs are to be served and filed; but there may be some things over which we have no control that may make it necessary to ask for a few days indulgence. If the Master pleases out of an abundance of caution, the plaintiff having rested after the defendant Attorney General rested, I think it is proper for me to state for the record that I renew the motions to dismiss the complaint. I do not want to have any questions raised afterwards that I did not make the proper motions.

Mr. Murphy: I join in that motion, make the same motions, and take an exception.

Hearing closed.

[fol. 2996] List of Exhibits

Plaintiff's Exhibits

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1	Chapter 367, Laws of 1884, entitled, "An Act to authorize the consolidation of manufacturing corporations." (Complainant's Exh. 1 in prior case, S. M. 49)	22
2	Chapter 95, Laws of 1823, entitled, "An Act to incorporate the gas light company of New York, passed March 26, 1823, incorporating the New York Gas Light Company with power and authority to make and manufacture gas to be used for the purpose of lighting said city or the	

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	streets thereof, and any buildings, manufactories or houses therein contained and situated." (Complainant's Exh. 2 in prior case, S. M. 53)	29
3	Chapter 313, Laws of 1837, entitled, "An Act to amend an Act entitled, 'An Act to incorporate the gas light company of the City of New York,' " passed March 26, 1823, which said Act was passed on May 2, 1837 as to the purchase, taking and holding of real or personal property. (Complainant's Exh. 3 in prior case, S. M. 54)	29
4	Chapter 424, Laws of 1855, entitled, "An Act to amend an Act, entitled 'An Act to incorporate the gas light company of the City of New York,' " passed March 26, 1923. This Chapter 424 of the laws of 1855, having been passed April 3, 1855, as to the purchase, taking and holding of real property (Complainant's Exh. 4 in prior case, S. M. 54)	30
5	Chapter 59, Laws of 1830, entitled "An Act to incorporate the Manhattan Gas Light Company," passed February 26, 1830, incorporating the Manhattan Gas Light Company, with power and authority to manufacture, make and sell gas to be used for the purpose of lighting the City of New York, or the streets thereof, and any buildings, manufactories or houses therein contained and situate, and to lay pipes for the purpose of conducting the gas in any of the streets or avenues of the said city. (Complainant's Exh. 5 in prior case, S. M. 55)	30

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6	Chapter 161, Laws of 1847, entitled an "Act to provide for increasing the capital stock of the Manhattan Gas Light Company of the City of New York," passed April 28, 1847. (Complainant's Exh. 6 in prior case, S. M. 55)	30
[fol. 2997]		
7	Chapter 89, Laws of 1852, entitled "An Act to increase the capital stock of the Manhattan Gas Light Company of the City of New York," passed March 25, 1852. (Complainant's Exh. 7 in prior case, S. M. 55)	31
8	Chapter 543, Laws of 1855, entitled, "An Act to increase the capital stock of the Manhattan Gas Light Company of the City of New York," passed April 17, 1855. (Complainant's Exh. 8 in prior case, S. M. 56)	31
9	Chapter 545, Laws of 1855, entitled "An Act to incorporate the Metropolitan Gas Light Company of the City of New York," passed April 17, 1875, incorporating the Metropolitan Gas Light Company of the City of New York, with power and authority to manufacture, make and sell gas used for the purpose of lighting the City of New York and the streets, avenues, lanes, alleys and squares thereof, and any buildings, manufactories or houses therein contained and situate, and the laying of pipes for the purpose of conducting the gas in any of the streets and avenues of the said city, and laying the necessary mains to furnish the gas to the inhabitants of said city. (Complainant's Exh. 9 in prior case, S. M. 57)	32

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10	Chapter 476, Laws of 1881, entitled, "An Act to provide for the payment of certain certificates of indebtedness of the Metropolitan Gas Light Company of the City of New York," passed June 8, 1881. (Complainant's Exh. 10 in prior case, S. M. 57)	32
11	Chapter 944, Laws of 1871, entitled, "An Act to authorize the construction of gas works and the manufacture and sale of gas for the purpose of lighting a portion of the City of New York, and the streets, avenues, squares and buildings therein, and to lay pipes for that purpose," passed June 12, 1871, granting authority to Isaac P. Martin and other named persons, to manufacture and sell gas for the purpose of lighting that portion of the City of New York lying north of 79th Street and including all of the Central Park. (Complainant's Exh. 11 in prior case, S. M. 57)	33
[fol. 2998]		
12	Resolution adopted by the Board of Aldermen of the City of New York, January 5, 1853, and by the Board of Assistants, February 12, 1853, approved by the Mayor, February 17, 1853, granting permission to the Manhattan Gas Light Company to lay their service pipes beyond the line of 42nd Street northward (Complainant's Exh. 176 in prior case, S. M. 175)	33
13	Resolution adopted by the Board of Aldermen of the City of New York, March 16, 1853, and by the Board of	

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	Assistants, April 7, 1853, and approved by the Mayor, April 8, 1853, granting permission to the Manhattan Gas Light Company to lay their street mains beyond the line of 42nd Street northward; copy certified by P. J. Scully, Clerk (Complainant's Exh. 177 in prior case, S. M. 175)	33
14	Judgment made in the Supreme Court for New York County, Trial Term, March 16, by Honorable Edward J. Gavegan, Justice, in the action of the Consolidated Gas Company of New York against the City of New York, on June 12, 1917 (Complainant's Exh. 179 in prior case, S. M. 228)	34
15	Chapter 480 of the Laws of 1910 of the State of New York, known as Chapter 48 of the Consolidated Laws of the State of New York, as amended and supplemented by several acts, including Chapter 134 of the Laws of 1921, also known as the Public Service Commission Law	87
16	Chapter 899 of the Laws of the State of New York, entitled "An Act to amend the Public Service Commission Law, in relation to the charge for illuminating gas in cities containing a population of one million or over," which became a law June 2, 1923, and which added Section 67-a to the Public Service Commission Law	37
17	Deed of the New York Gaslight Company to the Consolidated Gas Company of New York, dated November 10, 1884, covering Blocks 951, 952, 953, 978, 979, 987 and 239, commonly referred to as the Hester Street and 21st Street properties, recorded in	

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	Liber 1863 of Conveyances, page 22, January 30, 1885 (Complainant's Exh. 17, in prior case, S. M. 78)	38
[fol. 2999]		
18	Deed of the Metropolitan Gas Light Company to the Consolidated Gas Company, covering blocks 1089, 1090, 1107, 1157, 1177 and 1457, commonly referred to as the 42nd, 62nd and 65th Streets properties, recorded in Liber 1863 of Conveyances, page 33, on January 30, 1885. Deed is dated November 10, 1884 (Complainant's Exh. 18, in prior case, S. M. 79)	39
19	Deed of the Manhattan Gas Light Company to the Consolidated Gas Company, dated November 10, 1884, covering blocks 991, 989, 982, part of 870, 988 and 985, covering what is commonly referred to as 14th Street and the general office building, recorded in Liber 1863 of Conveyances, page 27, on January 30, 1885 (Complainant's Exh. 19, in prior case, S. M. 80)	40
20	Deed of the Harlem Gas Light Company to the Consolidated Gas Company, dated November 10, 1884, covering blocks 1682, 1683, 1704 and 1712, commonly known as the 111th Street property, recorded in Liber 1863 of Conveyances, page 49, on January 30, 1885 (Complainant's Exh. 20 in prior case, S. M. 80)	40
21	Deed of the Knickerbocker Gas Light Company to the Consolidated Gas Company, dated November 10, 1884, covering Blocks 1670 and 1692, commonly referred to as the 99th Street property, recorded in Liber 1863 of	

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	Conveyances, page 46, on January 30, 1885 (Complainant's Exh. 21 in prior case, S. M. 80)	40
22	Deed of the Municipal Gas Light Company to the Consolidated Gas Company, dated November 10, 1884, covering Blocks 1092, and 1093, commonly referred to as the 44th Street property, recorded in the New York County Register's Office, in Liber 1863 of Conveyances, page 44, on January 30, 1885 (Complainant's Exh. 22, in prior case, S. M. 81)	41
23	Deed of Robert Auld to the Consolidated Gas Company, dated May —, 1888, covering part of Block 1092, which is part of the 44th Street property, recorded in the New York County Register's office in Liber 2140 of Conveyances, page 269, on May 23, 1888. (Complainant's Exh. 23 in prior case, S. M. 81)	41
[fol. 3000]		
24	Deed of Benjamin Weed to the Consolidated Gas Company, dated March 17, 1899, covering Block 952, the 21st Street property, and recorded in the office of the Register of the County of New York on the 23rd day of June, 1902, in Section 3, Liber 83, page 320, indexed under Block No. 952 (Complainant's Exh. 24, in prior case, S. M. 82)	41
25	Deed of Jacob A. Weil to the Consolidated Gas Company, dated January 7, 1893, covering Block No. 1642, property at 114th Street and Third Avenue, and recorded in Liber 12, Block Series Conveyances, Section 6, page 394, on January 9, 1893 (Complainant's Exh. 25 in prior case, S. M. 82)	42

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26	Deed of Emma Wood to the Consolidated Gas Company, dated April 11, 1885, covering part of Block 870, which is part of the site of the General Office Building, and recorded in Liber 1870 of Conveyances, page 446, on May 5, 1885. (Complainant's Exh. 26 in prior case, S. M. 82)	42
27	Deed of Silas B. Brownell, and of Sarah S., his wife, to the Consolidated Gas Company of New York, dated March 3, 1902, covering part of Block 870, which is the site of the General Office Building, recorded in Liber 77 of the block series of Conveyances, Section 3, page 355, in the New York County Register's office on March 3, 1902. (Complainant's Exh. 27 in prior case, S. M. 83)	42
28	Deed of the City of New York to the Consolidated Gas Company as to property in Block 1692, containing covenants as to 98th Street, and being in relation to the 99th Street property, otherwise as more fully set forth in the deed, the lands affected by this instrument lying in Section 6 of Lot 1692, and recorded in the New York County Register's office, in Liber 40, block series of Conveyances, page 312 on December 31, 1897. (Complainant's Exh. 28 in prior case, S. M. 83)	43
29	Deed of Mary T. Constant, and others, as executors, to Consolidated Gas Company of New York, dated September 2, 1890, covering property in Lot 8, Block 1682, 111th Street property, recorded in Liber 2363 of Con-	

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	veyances, page 71 on October 1, 1890. (Complainant's Exh. 29 in prior case, S. M. 84)	43

[fol. 3001]

30	Deed of John D. Crimmins, to the Consolidated Gas Company of New York, dated December 24, 1892, covering property in Block 1999, the 132nd Street property, recorded in Liber 13 of the Block Series Conveyances, Section 7, page 4, on December 28, 1892. (Complainant's Exh. 30 in prior case, S. M. 84)	43
31	Deed of Guiseppe Molea, and wife, to the Consolidated Gas Company, dated September 1, 1905, covering part of Block 1683, the 111th Street property, recorded in Liber 108, page 149, New York County Register's office on September 11, 1905. (Complainant's Exh. 31 in prior case, S. M. 84)	44
32	Deed of the Lawyers Realty Company to the Consolidated Gas Company of New York, dated July 20, 1916, relative to property in Block 1028, 57th Street property, recorded in the office of the Register of the County of New York on July 21, 1916, in Block Series of Conveyances Section 4, Liber 170, page 229. (Complainant's Exh. 32 in prior case, S. M. 85)	44
33	Deed of the Standard Gas Light Company to the Consolidated Gas Company, dated December 31, 1914, relative to property in Block 1998, commonly known as the 132nd Street property, recorded in Liber 175 of the Block Series of Conveyances,	

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	Section 7, page 143, on January 14, 1915. (Complainant's Exh. 33, in prior case, S. M. 85)	44
34	Deed of the City Real Estate Company to the Consolidated Gas Company of New York, certified by the New York County Register, dated July 22, 1910, covering property in Section 10, Block 2583, the Tunnel Head property at Locust Avenue, recorded in Liber 76 of Conveyances, page 8, July 23, 1910. (Complainant's Exh. 34 in prior case, S. M. 86)	45
35	Deed of Ann McGuire to the Consolidated Gas Company of New York, dated December 30, 1909, relative to property in Block 2103, Section 8, recorded in the New York County Register's office, in Liber 36, Block Series of Conveyances, Section 8, page 395, on December 31, 1909. (Complainant's Exh. 35 in prior case, S. M. 86)	45
[fol. 3002]		
36	Deed of H. A. Jacot to the Consolidated Gas Company, dated June 19, 1912, covering part of Block 870, Section 3, this property being part of the site of the Company's office building, recorded in the office of the Register of the County of New York on November 20, 1912, in Section 3, Liber 179, at page 173. (Complainant's Exh. 36 in prior case, S. M. 87)	46
37	Deed of Harry A. Jacot to the Consolidated Gas Company of New York, dated July 2, 1912, relative to the land in Section 3 of Block 870 on the Land Map of the City of New York,	

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	being part of the site of the General Office Building, recorded in the office of the Register of the County of New York on November 20, 1912, in Block Series of Conveyances, Section 3, Liber 180, page 53. (Complainant's Exh. 37 in prior case, S. M. 87)	46
38	Deed of Harry A. Jacot to the Consolidated Gas Company of New York, dated June 5, 1912, relative to land in Section 3 of Block 870 on the Land Map of the City of New York, being part of the site of the General Office Building, recorded in the office of the Register of the County of New York on November 20, 1912, in Block Series of Conveyances, Section 3, Liber 180, page 54. (Complainant's Exh. 38 in prior case, S. M. 87)	46
39	Deed of Harry A. Jacot to the Consolidated Gas Company of New York, dated June 19, 1912, relative to land in Section 3, Block 870, on the Land Map of the City of New York, recorded in the office of the Register of the County of New York, on November 20, 1912, in Block Series of Conveyances, Section 3, Liber 179, page 174. (Complainant's Exh. 39 in prior case, S. M. 88)	47
40	Deed of Caroline Rullman to the Consolidated Gas Company of New York, dated March 10, 1910, relative to property in Section 11 of Block 3236 on the Land Map of the City of New York, this property being a part of the site of the so-called Kingsbridge Holder, recorded in Liber 115, Block Series of Conveyances, Section 11, page 385 and indexed in Block 3236 on April 25, 1910. (Complainant's Exh. 40 in prior case, S. M. 89)	47

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41	Deed of Caroline A. Riemer to the Consolidated Gas Company of New York, dated July 6, 1912, relative to property in Section 11, Block 3230 on the Land Map of the City of New York, being a part of the so-called Kingsbridge Holder, recorded in the office of the Register of the County of New York in Liber 135, Block Series Conveyances, Section 11, page 92, and indexed in Block 3236 on July 19, 1912. (Complainant's Exh. 41 in prior case, S. M. 89)	48
42	Deed of the New Amsterdam Gas Company to the Consolidated Gas Company of New York, dated April 30, 1918, relative to land in Section 3, Block 989 on the Land Map of the City of New York, recorded in the office of the Register of New York County in Liber 3061 of Conveyances, at page 145, indexed in Block 989 on July 10, 1918. (Complainant's Exh. 42 in prior case, S. M. 89)	48
43	Quit Claim Deed of Thomas J. McGuire and Anna, his wife, to the Consolidated Gas Company of New York, dated December 30, 1909, relating to property in Block 2108, Section 8 on the Land Map of the City of New York, recorded in the office of the Register of the County of New York on December 31, 1909, in Block Series of Conveyances, Section 8, Liber 36, page 393. (Complainant's Exh. 43 in prior case, S. M. 90)	49

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44	Consolidation Agreement, dated September 29, 1884, between the New York Gas Light Company, the Manhattan Gas Light Company, the Metropolitan Gas Light Company of the City of New York, the New York Mutual Gas Light Company, the Municipal Gas Light Company of New York, the Knickerbocker Gas Light Company and the Harlem Gas Light Company, for the consolidation of the companies into the Consolidated Gas Company of New York, filed and recorded in the office of the New York County Clerk on November 10, 1884, and in the office of the Secretary of State on November 10, 1884. (Complainant's Exh. 44 in the prior case, S. M. 105)	50
[fol. 3004]		
45	Certificate of Reorganization of the New York Gas Light Company, dated May 1, 1871, pursuant to Chapter 480 of the Laws of 1867, amending Chapter 38 of the Laws of 1848, authorizing the formation of gas light companies, filed in the Secretary of State's office on June 1, 1871, and in the New York County Clerk's office on June 1, 1871. (Complainant's Exh. 45 in the prior case, S. M. 106)	51
46	Grant from the Mayor, Aldermen and Commonalty of the City of New York, to the New York Gas-Light Company, included in the Articles of Agreement made May 12, 1823, by the Mayor, Aldermen and Commonalty of the City of New York and the New York Gas Light Company. (Complainant's Exh. 46 in prior case, S. M. 107)	51

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47	Certificate of Reorganization of the Manhattan Gas Light Company, dated September 6, 1867, pursuant to Chapter 480 of the Laws of 1867, amending Chapter 37 of the Laws of 1848, authorizing the formation of the gas light companies, filed in the office of the Secretary of State on December 31, 1867, and in the office of the New York County Clerk on December 30, 1867. (Complainant's Exh. 47 in prior case, S. M. 107)	51
48	Original Grant from the Mayor, Aldermen and Commonalty of the City of New York to the Manhattan Gas Light Company, dated May 8, 1833. (Complainant's Exh. 48 in prior case, S. M. 108)	52
49	Original Grant of the Mayor, Aldermen and Commonalty of the City of New York to the Manhattan Gas Light Company, dated May 5, 1848. (Complainant's Exh. 49 in prior case, S. M. 108)	52
50	Resolution of the Common Council of the City of New York, adopted June 9, 1858, by the Council, and on June 10, 1858, by the Board of Aldermen, December 22, 1858, granting to the Metropolitan Gas Light Company of the City of New York authority to lay pipes, etc. (Complainant's Exh. 50 in prior case, S. M. 109)	52
[fol. 3005]		
51	Certificate of Incorporation of The Municipal Oxygen Gas Company of the City of New York, dated May 29, 1874, under the Gas Light Companies' Act of 1848, for manufactur-	

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	ing and supplying gas for lighting the streets and public and private buildings in the City of New York, filed in the office of the Secretary of State of New York on June 1, 1874, and filed in the New York County Clerk's office on June 1, 1874. (Complainant's Exh. 51 in prior case, S. M. 109)	53
52	Order changing the name of The Municipal Oxygen Gas Company of the City of New York to The Municipal Gas Light Company of New York, made at a special term of the New York County Supreme Court on June 5, 1876, and filed and recorded in the New York County Clerk's office on June 7, 1876. (Complainant's Exh. 52 in prior case, S. M. 110)	53
53	Resolution adopted by the Board of Aldermen of the City of New York on December 21, 1876, approved by the Mayor of the City of New York on December 23, 1876, granting permission to all incorporated gas light companies to lay gas mains and pipes in the streets, etc., of the city of New York, for the purpose of supplying gas to the city and its inhabitants. (Complainant's Exh. 53 in prior case, S. M. 110)	53
54	Grant by the City of New York to The Municipal Gas Light Company, dated March 22, 1877, prescribing conditions upon which the Municipal Gas Light Company may place fixtures in the streets of the City of New York, under the terms of the resolution of December 21, 1876, and the assent of the Municipal Gas	

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	Light Company in acceptance of the conditions. (Complainant's Exh. 54 in prior case, S. M. 111)	54
55	Certificate of Increase of the capital stock of The Municipal Gas Light Company of New York, dated March 3, 1880. (Complainant's Exh. 55 in prior case, S. M. 112)	54
[fol. 3006]		
56	Certificate of Incorporation of the Knickerbocker Gas Light Company, dated June 24, 1876, under the Gas Light Companies' Act of 1848, for the manufacturing, supplying, vending and conducting of gas and doing all necessary things for the purpose of manufacturing and vending gas and lighting public and private buildings, streets, avenues and parks of the City of New York with the same. (Complainant's Exh. 56 in prior case, S. M. 112)	54
57	Certificate of Incorporation of the Anthracite Gas Lighting and Heating Company, dated May 27, 1863. (Complainant's Exh. 57 in prior case, S. M. 113)	55
58	Resolution of the Common Council of the City of New York, adopted June 18, 1863, and by the Board of Aldermen of the City of New York on June 22, 1863, granting to The Anthracite Gas Lighting and Heating Company of New York the right to lay pipes in the public streets; also a further resolution passed by the Board of Councilmen on May 18, 1865, and the Board of Aldermen on May 24, 1865, relating to the same subject. (Complainant's Exh. 58 in prior case, S. M. 113)	55

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59	Certificate of Incorporation of The Citizens Mutual Gas Company of New York, dated May 26, 1865. (Complainant's Exh. 59 in prior case, S. M. 113)	55
60	Deed dated May 27, 1865 from the Anthracite Gas Lighting & Heating Company of New York to the Citizens Mutual Gas Company of the City of New York, transferring rights granted to the former by The City of New York by the previous resolution. (Complainant's Exh. 60 in prior case, S. M. 114)	56
61	Certificate of Incorporation of the Union Gaslight Company of the City of New York, dated October 26, 1871. (Complainant's Exh. 61 in prior case, S. M. 114)	56
62	Deed from The Citizens Mutual Gas Company of the City of New York to the Union Gaslight Company of New York, dated November 22, 1871, conveying the rights acquired by the former from the City of New York by the resolutions above-mentioned. (Complainant's Exh. 62 in prior case, S. M. 115)	55
[fol. 3007]		
63	Order of the Special Term of the New York County Supreme Court, made June 15, 1875, by the Honorable John R. Brady, Justice, In the Matter of the People of the City of New York against the Union Gas Light Company of the City of New York, et al., appointing Charles Edgar Appleby, the Receiver of the property, franchises and effects of the Union Gas Light Company. (Complainant's Exh. 63 in prior case, S. M. 115)	57

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64	Order of the Special Term of the New York County Supreme Court, made July 24, 1876, by the Honorable T. R. Westerbrook, Justice, In the Matter of the People of the City of New York against the Union Gas Light Company of the City of New York, et al., directing a sale by the Receiver of the Union Gas Light Company of the property, rights, franchises, contracts, etc., of that company. (Complainant's Exh. 64 in prior case, S. M. 116)	57
65	Order of the Special Term of the New York County Supreme Court, made March 11, 1879, by the Honorable Abraham R. Lawrence, Justice, In the Matter of the People of the City of New York against the Union Gas Light Company of the City of New York, et al., confirming the sale by the Receiver of the property, assets, effects, franchises and rights belonging to the Union Gas Light Company to Walter Osborn, Tilton E. Doolittle, Jared E. Redfield, Receivers of the Johnson Savings Bank of New Haven, Connecticut, and reciting due notice of the sale, and that the purchasers at such sale had duly assigned their purchase and bid to Clark Bell, and that the Receivers had executed transfers of such property and assets to Clark Bell, and further ratifying and confirming the action of the Receiver. (Complainant's Exh. 65 in prior case, S. M. 117)	58
66	Deed of Charles E. Appleby, Receiver of the Union Gas Light Company, to Clark Bell, dated August 10, 1876,	

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	transferring to the latter the property, rigths, and franchises, of the Union Gas Light Company. (Com-	
[fol. 3008]	plainant's Exh. 66 in prior case, S. M. 117)	58
67	Deed of Clark Bell to the Knickerbocker Gas Light Company, dated August 22, 1876, transferring to the latter the property and franchises acquired by Clark Bell from the Receiver of the Union Gas Light Company. pany. (Complainant's Exh. 67 in prior case, S. M. 117)	58
68	Affidavit and proof of publication under Section 3 of Chapter 944 of the Laws of 1871, dated May 20, 1878, the affidavit being made by William Foster, Jr. (Complainant's Exh. 68 in prior case, S. M. 118)	59
69	Assignment from William R. Dyer, one of the grantees mentioned in the Act of 1871, to William Cauldwell, conveying the former's rights under the Act, this assignment being dated July 31, 1871. (Complainant's Exh. 69 in prior case, S. M. 118)	59
70	Assignment from William Cauldwell as assignee of William R. Dyer, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated December 29, 1871, transferring the rights obtained by Cauldwell from William R. Dyer under the last preceding instrument. (Complainant's Exh. 70 in prior case, S. M. 119)	59
71	Assignment of William P. Smith, one of the grantees mentioned in the Act of 1871, to Isaac P. Martin, under date of June 29, 1871, conveying the former's rights under the Act. (Complainant's Exh. 71 in prior case, S. M. 119)	59

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72	Assignment from Isaac P. Martin to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 27, 1871, transferring the interest obtained by Martin from William P. Smith under the last preceding instrument, together with the Power of Attorney attached to the assignment proper. (Complainant's Exh. 72 in prior case, S. M. 120)	60
73	Assignment from Edward Jones, one of the grantees mentioned in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the former's interest under the Act. (Complainant's Exh. 73 in prior case, S. M. 120)	60
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74	Assignment from Shepherd F. Knapp, one of the grantees mentioned in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 28, 1871, of the former's interest under the Act. Complainant's Exh. 74 in prior case, S. M. 121)	60
75	Assignment from William H. Bloom, one of the grantees under the Act of 1871, to Cornelius Corson, dated July 3, 1871, of the former's interest under the Act. (Complainant's Exh. 75 in prior case, S. M. 121)	61
76	Assignment from Cornelius Corson to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 27, 1871, of the interest acquired from William H. Bloom, under the last preceding instrument. (Complainant's Exh. 76 in prior case, S. M. 121)	61

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77	Assignment from Joel A. Fithian, one of the grantees mentioned in the Act of 1871, to Richard B. Connolly, dated July 6, 1871, of the former's interest under the Act. (Complainant's Exh. 77 in prior case, S. M. 122)	61
78	Assignment from Richard B. Connolly to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell dated November 25, 1871, of the interest acquired from Joel A. Fithian under the last preceding instrument. (Complainant's Exh. 78 in prior case, S. M. 122)	61
79	Assignment from Walter Smith, one of the grantees named in the Act of 1871, dated November 28, 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, of the former's interest under the Act. (Complainant's Exh. 79 in prior case, S. M. 123)	62
80	Assignment from Joseph Murphy, one of the grantees named in the Act of 1871, to Forbes Holland, dated July 13, 1871, of the former's interest under the Act. (Complainant's Exh. 80 in prior case, S. M. 123)	62
81	Assignment from Forbes Holland to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the interest acquired from Joseph Murphy under the last preceding assignment. (Complainant's Exh. 81 in prior case, S. M. 124)	62
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82	Assignment from Edward Taylor, one of the grantees named in the Act of 1871, to William M. Tweed, Jr., dated	

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	July 3, 1871, of the former's interest under the Act. (Complainant's Exh. 82 in prior case, S. M. 124)....	63
83	Assignment from William M. Tweed, Jr., to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 27, 1871, of the interest acquired from Edward Taylor under the last preceding assignment. (Complainant's Exh. 83 in prior case, S. M. 124)	63
84	Assignment from John E. Cronly, one of the grantees named in the Act of 1871, to Alexander Frear, dated July 18, 1871, of the former's interest under the Act. (Complainant's Exh. 84 in prior case, S. M. 125)	63
85	Assignment from George H. Wicks, one of the grantees named in the Act of 1871, to Alexander Frear, dated November 24, 1871, conveying the former's interest under the Act. (Complainant's Exh. 85 in prior case, S. M. 125)	63
86	Assignment from Alexander Frear to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 24, 1871, of the interest acquired from George H. Wicks and John E. Cronly. (Complainant's Exh. 86 in prior case, S. M. 125)..	64
87	Assignment from Joseph G. Jennings, one of the grantees named in the Act of 1871, to Charles Banks, dated June 29, 1871, of the former's interest under the Act. (Complainant's Exh. 87 in prior case, S. M. 126)	64
88	Assignment from Charles Banks to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the interest acquired	

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	from Joseph G. Jennings under the last preceding assignment. (Complainant's Exh. 88 in prior case, S. M. 126)	64
89	Assignment from Henry Johnson, one of the grantees named in the Act of 1871, to William Hitchman, dated November 24, 1871, of the grantor's interest, under the Act. (Complainant's Exh. 89 in prior case, S. M. 127)	64
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90	Assignment from William Hitchman to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the interest acquired of Henry Johnson under the last preceding assignment. (Complainant's Exh. 90 in prior case, S. M. 127)	65
91	Assignment from Edward J. Shandley, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated December 4, 1871, of the grantor's interest under the Act. (Complainant's Exh. 91 in prior case, S. M. 127)	65
92	Assignment from John C. Angell, one of the grantees named in the Act of 1871, to James M. Sweeney, dated June 21, 1871, of the former's interest under the Act. (Complainant's Exh. 92 in prior case, S. M. 128)	65
93	Assignment from James M. Sweeney to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated December 26, 1871, of the interest acquired from John C. Angell under the last preceding assignment and also power of attorney attached. (Complainant's Exh. 93 in prior case, S. M. 128)	66

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94	Assignment from William Vail, one of the grantees named in the Act of 1871, to Thomas C. Fields, dated June 14, 1871, of the former's interest under the Act. (Complainant's Exh. 94 in prior case, S. M. 129)....	66
95	Assignment from Patrick Quinn, one of the grantees named in the Act of 1871, to Thomas C. Fields, dated June 14, 1871, of the former's interest under the Act. (Complainant's Exh. 95 in prior case, S. M. 129)..	66
96	Assignment from William H. Murphy, one of the grantees named in Chapter 944 of the Laws of 1871, to Thomas C. Fields, dated June 14, 1871, of the former's interest under the Act. (Complainant's Exh. 96 in prior case, S. M. 129).....	67
97	Assignment from William Higgins, one of the grantees named in the Act of 1871, to Thomas C. Fields, dated June 26, 1871, of the former's interest under the Act. (Complainant's	
[fol. 3012]	Exh. 97 in prior case, S. M. 130)..	67
98	Assignment from John H. Johnston, one of the grantees named in the Act of 1871, to Thomas C. Fields, dated June 14, 1871, of the former's interest under the Act. (Complainant's Exh. 98 in prior case, S. M. 130)....	67
99	Assignment from George Chivvis, one of the grantees named in the Act of 1871, to Thomas C. Fields, dated July 6, 1871, of the former's interest under the Act. (Complainant's Exh. 99 in prior case, S. M. 130).....	67
100	Assignment from Thomas C. Fields to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the interest ac-	

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101	Assignment from Richard H. Vaughan, one of the grantees named in the Act of 1871, to George L. Loutrel, dated July 3, 1871, of the former's interest under the Act. (Complainant's Exh. 101 in prior case, S. M. 131)	68
102	Assignment from George L. Loutrel, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the interest acquired from Richard H. Vaughan under the last preceding assignment. (Complainant's Exh. 102 in prior case, S. M. 132)	68
103	Assignment from Andrew J. Smith, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the former's interest under the Act. (Complainant's Exh. 103 in prior case, C. M. 132)	69
104	Assignment from Henry A. Smith, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated December 5, 1871, of the former's interest under the Act, and also the power of attorney thereto attached. (Complainant's Exh. 104 in prior case, S. M. 132)	69
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105	Assignment from Joseph Bell, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J.	

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	Davison and Gordon H. Waddell, dated November 25, 1871, of the former's interest under the Act. (Complainant's Exh. 105 in prior case, S. M. 133)	69
106	Assignment from John J. Walsh, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated December 30, 1871, of the former's interest under the Act. (Complainant's Exh. 106 in prior case, S. M. 133)	70
107	Assignment from Delaven Peck, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated the 27th day of November, 1871, and acknowledged November 27, 1871, of the former's interest under the Act. (Complainant's Exh. 107 in prior case, S. M. 134)	70
108	Assignment from Thomas Y. Avery, one of the grantees named in the Act of 1871, to A. Oakley Hall, dated June 29, 1871, of the former's interest under the Act. (Complainant's Exh. 108, in prior case, S. M. 134)	70
109	Assignment from A. Oakey Hall to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 27, 1871, of the interest acquired from Thomas Y. Avery under the last preceding assignment. (Complainant's Exh. 109 in prior case, S. M. 134)	71
110	Assignment from John Balmore, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell,	

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	dated November 27, 1871, of the former's interest under the Act. Complainant's Exh. 110 in prior case, S. M. 135)	71
111	Assignment from James S. Turner one of the grantees named in the Act of 1871, to William M. Tweed, dated July 3, 1871, of the former's interest under the Act. (Complainant's Exh. 111 in prior case, S. M. 135)	71
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112	Assignment from William M. Tweed to C. S. Bushnell, Henry J. Davison Gordon H. Waddell, *a* dated November 27, 1871, of the interest acquired from James S. Turner under the last preceding assignment. (Complainant's Exh. 112 in prior case, S. M. 136)	72
113	Assignment from William Johnston, one of the grantees named in the Act of 1871, to John Ryan, dated December 16, 1871, of the former's interest under the Act. (Complainant's Exh. 113 in prior case, S. M. 136)	72
114	Assignment from John Ryan to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated December 18, 1871, of the interest acquired from William Johnston under the last preceding assignment. (Complainant's Exh. 114 in prior case, S. M. 136)	72
115	Assignment from Henry S. Murray, one of the grantees named in the Act of 1871, to Peter B. Sweeney, dated July 3, 1871, of the former's interest under the Act. (Complainant's Exh. 115 in prior case, S. M. 137)	72
116	Assignment from Peter B. Sweeney, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated De-	

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	cember 4, 1871, of the interest acquired from Henry S. Murray under the last preceding assignment. (Complainant's Exh. 116 in prior case, S. M. 137)	73
117	Assignment from Peter H. E. Baxter, one of the grantees named in the Act of 1871, to Henry W. Genet, dated June 16, 1871, of the former's interest under the Act. (Complainant's Exh. 117 in prior suit, S. M. 138)	73
118	Assignment from Henry W. Genet to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 28, 1871, of the interest acquired from Peter H. E. Baxter, under the last preceding assignment. (Complainant's Exh. 118 in prior case, S. M. 138)	73
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119	Assignment from John Cox, one of the grantees named in Chapter 944 of the Laws of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the former's interest under that Act. (Complainant's Exh. 119 in prior case, S. M. 138)	74
120	Assignment from John J. Turner, one of the grantees named in the Act of 1871, to William E. King, dated July 3, 1871, of the former's interest under that Act. (Complainant's Exh. 120 in prior case, S. M. 139)	74
121	Assignment from William E. King to James F. Pierce, dated July 18, 1871, of interest acquired from John J. Turner under the last preceding assignment. (Complainant's Exh. 121 in prior case, S. M. 139)	74

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122	Assignment from James F. Pierce to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the interest acquired from William E. King, under the last preceding assignment. (Complainant's Exh. 122 in prior case, S. M. 140)	75
123	Assignment from Edgar Brower, one of the grantees named in the Act of 1871, to Charles E. Wilbour, dated July 3, 1871, of the former's interest under the Act. (Complainant's Exh. 123 in prior case, S. M. 140)	75
124	Assignment from Charles E. Wilbour to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 27, 1871, of the interest acquired from Edgar Brower under the last preceding assignment. (Complainant's Exh. 124 in prior case, S. M. 140)	75
125	Assignment from Charles E. Loew, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the former's interest under the Act. (Complainant's Exh. 125 in prior case, S. M. 141)	76
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126	Assignment from Matthew T. Brennan, one of the grantees named in the Act of 1871, to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, dated November 25, 1871, of the former's interest under the act (Complainant's Exh. 126 in prior case, S. M. 141)	76
127	Resignation dated November 27, 1871, on the part of H. W. Genet, Richard B. Connolly, Thomas C. Fields, Wil-	

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	liam M. Tweed, Cornelius Corson, Charles E. Wilbour, Peter B. Sweeney, A. Oakey Hall and Henry Hilton, as Executive Committee provided in the third section of Chapter 944 of the Laws of 1871. (Complainant's Exh. 127 in prior case, S. M. 142)	76
128	Instrument dated November 27, 1871, signed by Hugh Smith and James M. Sweeney, reciting that they have been duly elected pursuant to the third section of Chapter 944 of the Laws of 1871, as an Executive Committee as therein provided, and releasing, relinquishing, assigning and setting over to C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, all and every their right, title and interest as grantees or assignees in and to the charter, franchise, and authority granted by the said Act. (Complainant's Exh. 128 in prior case, S. M. 142)	77
129	Assignment from C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, to William Foster, Jr., dated February 14, 1874, of all and every their joint and several rights, title and interest as owned by intermediate assignments from Isaac P. Martin, William P. Smith, Edward Jones, Shepherd F. Knapp and William R. Dyer, or their assignees, as original grantees under the Act of 1871. (Complainant's Exh. 129 in prior case, S. M. 143)	77
130	Assignment from C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, to Even F. Bacon, dated February 14, 1874, of all the rights	

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	of the grantors acquired by intermediate assignments from Edward Taylor, Joseph Murphy, Walter Smith, Joel A. Fithian and William M. Bloom, or their assignees, under	
[fol. 3017]	the Act of 1871. (Complainant's Exh. 130 in prior case, S. M. 143)	78
131	Assignment from Cornelius S. Bushnell, Henry J. Davison and Gordon H. Waddell to James M. Townsend, dated February 14, 1874, of the interest of the grantors acquired by intermediate assignment from George H. Wicks, John E. Cronly, John C. Angell, Edward J. Shandley, Joseph G. Jennings, Henry Johnston, or their assigns, under the Act of 1871. (Complainant's Exh. 131 in prior case, S. M. 144)	78
132	Assignment from C. S. Bushnell, Henry J. Davison and Gordon H. Waddell to Samuel J. Young, dated February 14, 1874, of the interest of the grantors acquired by intermediate assignment from William Vail, William H. Murphy, Patrick Quinn, George Chivvis, John H. Johnston, William Higgins, or their assignees, under the Act of 1871. (Complainant's Exh. 132 in prior case, S. M. 144)	78
133	Assignment from C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, to Charles E. Appleby of all the interest of the grantors acquired by intermediate assignments from Andrew J. Smith, Henry A. Smith, Richard H. Vaughan, Joseph Bell, Delavan Peck, John J. Walsh, or their assigns, under the Act of 1871. (Complainant's Exh. 133 in prior case, S. M. 145)	79

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134	Assignment from C. S. Bushnell Henry J. Davison and Gordon H. Waddell, to Paschal W. Turney, dated February 14, 1874, of the interest of the grantors acquired by intermediate assignment from William Johnston (otherwise called William Johnson), James S. Turner, Thomas Y. Avery, John Balmore, Henry S. Murray, and Peter H. Baxter, Jr., or their assigns, under the Act of 1871. (Complainant's Exh. 134 in prior case, S. M. 145)	79
135	Assignment from C. S. Bushnell, Henry J. Davison and Gordon H. Waddell, to Henry H. Porter, dated February 14, 1874, of the interest of the grantors acquired by intermediate assignments from Matthew T. Brennan, Charles E. Loew, Edgar Brower, John J. Turner, and John Cox, or their assigns, under the Act of 1871. (Complainant's Exh. 135 in prior case, S. M. 146)	80
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136	Assignment from William Foster, Jr., James M. Townsend, Paschal W. Turney and Eben F. Bacon, Charles E. Appleby, Henry H. Porter and Samuel J. Young to the Union Gas Light Company of the City of New York, dated February 25, 1874, of their rights under the franchise granted by the Act of 1871, among other things. (Complainant's Exh. 136 in prior case, S. M. 146)	80
137	Assignment from William Foster, Jr., to Robert M. C. Graham, dated December 5, 1876, of all the rights acquired by the grantor by intermediate assignment from Isaac P.	

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	Martin, William P. Smith, Edward Jones, Shepherd F. Knapp and William R. Dyer, under the Act of 1871. (Complainant's Exh. 137 in prior case, S. M. 147)	80
138	Assignment from Eben F. Bacon to John Sickels, dated December 5, 1876, of the interest acquired by intermediate assignment from Edward Taylor, Joseph Murphy, Walter Smith, Joel Fithian and William H. Bloom, under the Act of 1871. (Complainant's Exh. 138 in prior case, S. M. 147)	81
139	Assignment from James M. Townsend to Jared E. Redfield, dated December 5, 1876, of the interest acquired by intermediate assignment from George N. Wicks, John E. Cronley, John C. Angell, Edward J. Shandley, Joseph G. Jennings and Henry Johnston under the Act of 1871. (Complainant's Exh. 139 in prior case, S. M. 147)	81
140	Assignment from Samuel J. Young to George Howes, dated December 5, 1876, of the interest acquired by the intermediate assignment from William Vail, William H. Murphy, Patrick Quinn, George Chivvis, John H. Johnston and William Higgins under the Act of 1871. (Complainant's Exh. 140 in prior case, S. M. 148)	81
141	Assignment from Charles E. Appelby to Tilton E. Doolittle, dated December 4, 1876, of the interest acquired by intermediate assignment from Andrew J. Smith, Henry A. Smith, Richard H. Vaughan, Joseph Bell, Delavan Peck and John J. Walsh,	

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	under the Act of 1871. (Complainant's Exh. 141 in prior case, S. M. 148)	82
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142	Assignment from William Foster, Jr., James M. Townsend, Eben F. Bacon, Charles E. Appleby, Henry H. Porter and Samuel J. Young to Walter Osborn, dated December 5, 1876, of all the rights of the grantors acquired as survivors of Paschal W. Turney, deceased, under the provision of the agreement dated February 25, 1874, between the grantors and Paschal W. Turney and the Union Gas Light Company, it being recited that it is the intention of the assignment to vest in Walter Osborn all the right, title and interest of Paschal W. Turney as owner of certain grants and franchises from certain of the original grantees named in the Act of 1871, and vested in the assignors as survivors of Turney under the agreement of February 25, 1874, and by the instrument the survivors also elected to appoint Walter Osborn a member of the Executive Committee existing under Section 3 of the Act of 1871. (Complainant's Exh. 142 in prior case, S. M. 149)	83
143	Instrument dated December 5, 1876, from Charles E. Appleby, William Foster, Jr., James M. Townsend, Eben F. Bacon and Samuel J. Young, recited to be the surviving members of the Executive Committee duly holding office under Section 3 of Chapter 944 of the Laws of 1871, relinquishing, assigning and setting over to Robert M. C. Graham, Tilton	

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	E. Doolittle, Jared E. Redfield, John Sickels, George Howes, Walter Osborn and Henry H. Porter, and their assigns, all the rights, powers and control which the subscribers to that instrument have acquired or can in any way exercise or have as such Executive Committee. (Complainant's Exh. 143 in prior case, S. M. 150)	83
144	Instrument dated December 11, 1876, executed by the Union Gas Light Company, consenting that William Foster, Jr., James M. Townsend, Eben F. Bacon, Charles E. Appleby, Henry H. Porter and Samuel J. Young, the assignees and owners of intermediate assignments from the original grantees of the charter, grant, franchise and authority granted by the State by the Act of 1871, the owners by right of survivorship of the rights, title and interest of Paschal W. Turney, deceased, may assign, transfer and set	
[fol. 3029]	over to Robert M. C. Graham, Tilton E. Doolittle, Jared E. Redfield, John Sickels, George Howes, Walter Osborn and Henry H. Porter, all of the said interest, the consent being given under the provisions of a certain agreement of February 25, 1874, between William Foster, Jr., et al., and The Union Gas Light Company; and the instrument requesting Graham, Doolittle, Sickels, Howes, Osborn and whoever may be associated with them, to grant and delegate to the Knickerbocker Gas Light Company of the City of New York all the rights and privileges as agents and attorneys heretofore	

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	granted and delegated to the Union Gas Light Company, and also requesting Foster, Townsend, Bacon, Appelby, Porter and Young, surviving members of the Executive Committee under the Act, to elect Walter Osborn a member of the Executive Committee to fill the vacancy caused by the death of Paschal W. Turney, and to assign to Osborn all the right, title and interest of Turney. (Complainant's Exh. 144 in prior case, S. M. 151)	84
145	Instrument dated August 10, 1876, from Charles E. Appleby, receiver of the Union Gas Light Company to Clark Bell, of the interest of the Union Gas Light Company or the receiver, in a certain contract made by the Union Gas Light Company with William Foster, Jr., and certain other grantees of the grants made by the State of New York, known as Chapter 944 of the Laws of 1871, the contract being dated February 25, 1874, and all the right, title and interest of the company or the receiver in and to the grants. (Complainant's Exh. 145 in prior case, S. M. 151)	85
146	Indenture, dated December 11, 1876, between Robert M. C. Graham, Tilton E. Doolittle, Jared E. Redfield, John Sickels, George Howes, Walter Osborn and Henry H. Porter, with the Knickerbocker Gas Light Company, reciting the said Act of the Legislature and various assignments, the company covenanting to perform all work, labor and services contemplated by the Act for the beneficial exercise of the rights and	

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	privileges thereby granted. (Complainant's Exh. 146 in prior case, S. M. 152)	85
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147	Consent of the Knickerbocker Gas Light Company, dated May 20, 1878, that Robert M. C. Graham, Tilton E. Doolittle, Jared E. Redfield, Walter Osborn and Henry H. Porter, five of the assignees and owners of the charter, grants, franchises, etc., under the Act of 1871, assign to William Bayard Cutting, Robert F. Cutting, N. Bayard Brown, O. P. C. Billings and William W. Moir, all of the said interest, the consent being given under the provisions of the agreement of December 11, 1876, between the individuals named and the Knickerbocker Company. (Complainant's Exh. 147 in prior case, S. M. 153)	86
148	Consent signed by Jared E. Redfied, Tilton E. Doolittle, R. M. C. Graham, Walter Osborn and H. H. Porter, five of the members of the Executive Committee under the Act of 1871, releasing and assigning to William Bayard Cutting, Robert F. Cutting, M. Bayard Brown, O. P. C. Billings and William W. Moir and their assigns all the rights, power and control which the assignors had or could exercise as such Executive Committee. (Complainant's Exh. 148 in prior case, S. M. 153)	86
149	General Release, dated May 20, 1878, executed by Walter Osborn, Tilton E. Doolittle and Jared E. Redfield, individually and as receivers of the Townsend Savings Bank of New Haven, to the Knickerbocker Gas	

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	Light Company and its successors, of any claims which they may have against the company. Complainant's Exh. 149 in prior case, S. M. 154)	87
150	Consent, dated March 11, 1880, by the Knickerbocker Gas Light Company, that William Bayard Cutting, Robert F. Cutting, M. Bayard Brown, O. P. C. Billings, William W. Moir, John Sickels and George Howes, assignees and owners by intermediate assignments of the original charter, grant and franchise granted by the Act of 1871, transfer and set over to O. Ottendorfer, H. E. Gawtry, Henry Day, Philip Allen, Charles G. Francklyn, Peter Gardner, and S. C. Thompson all of their interests, the consent being under a certain agreement dated December 11, 1876, between the individuals first named and the Knickerbocker Gas Light Company. (Complainant's Exh. 150 in prior case, S. M. 154)	87
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151	Instrument, dated May 20, 1878, executed by Jared E. Redfield, relinquishing and assigning to William W. Moir, all his rights and interests as owner by intermediate assignments of George H. Wicks, John E. Cronly, John C. Angell, Edward J. Shandley, Joseph G. Jennings and Henry Johnson, original grantees under the Act of 1871. (Complainant's Exh. 151 in prior case, S. M. 155)	88
152	Instrument, dated May 20, 1878, executed by Tilton E. Doolittle relinquishing and assigning to Oliver P.	

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	C. Billings all his rights and interest by intermediate assignments from Andrew J. Smith, Henry A. Smith, Richard H. Vaughn, Joseph Bell, Delavan Peck and John J. Walsh under the Act of 1871. (Complainant's Exh. 152 in prior case, S. M. 155).	88
153	Instrument, dated May 20, 1878, executed by Robert M. C. Graham, relinquishing and assigning to M. Bayard Brown, all his rights and interest by assignment from William Foster, Jr., and by intermediate assignments from Isaac P. Martin, William P. Smith, Edward Jones, Shepherd Knapp and William R. Dyer, grantees under the Act of 1871. (Complainant's Exh. 153 in prior case, S. M. 156)	89
154	Instrument, dated May 18, 1878, and executed by Henry H. Porter, relinquishing and transferring to Robert F. Cutting, all his interest and title by intermediate assignment from John Cox, John J. Turner, Edgar Brower, Charles E. Loew and Matthew T. Brennan, grantees under the Act of 1871. (Complainant's Exh. 154 in prior case, S. M. 156)	89
155	Instrument, dated May 20, 1878, executed by Walter Osborne, relinquishing and assigning to William Bayard Cutting, all his rights and interest as assignee of William Foster, Jr., James M. Townsend, Eben F. Bacon, Charles E. Appleby, Henry H. Porter and Samuel J. Young, the survivors of Paschal W. Turney, deceased, and of which Turney was the owner by inter-	

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	mediate assignments from Thomas Y. Avery, John Balmore, James S. Turner, William Johnston, Henry S. Murray and Peter H. E. Baxter Jr., original grantees under the Act of	
[fol. 3023]	1871. (Complainant's Exh. 155 in prior case, S. M. 157)	89
156	Instrument, dated March 8, 1880, executed by William W. Moir, relinquishing and assigning to Charles G. Francklyn all his interest and rights by intermediate assignment from George H. Wicks, John E. Cronly, John C. Angell, Edward J. Shandley, Joseph G. Jennings and Henry Johnson, original grantees under the Act of 1871. (Complainant's Exh. 156 in prior case, S. M. 157)	90
157	Instrument, dated March 9, 1880, executed by Oliver P. C. Billings, relinquishing and assigning to Philip Allen all his rights and interest by intermediate assignments from Andrew J. Smith, Henry A. Smith, Richard H. Vaughn, Joseph Bell, Delavan Peck and John J. Walsh, original grantees under the Act of 1871. (Complainant's Exh. 157 in prior case, S. M. 158)	90
158	Instrument, dated March 11, 1880, executed by M. Bayard Brown, relinquishing and assigning to Henry Day all his right and interest by assignment from William Foster, Jr., and by intermediate assignments from Isaac P. Martin, William P. Smith, Edward Jones, Shepherd F. Knapp and Willam R. Dyer, original grantees under the Act of 1871. (Complainant's Exh. 158 in prior case, S. M. 158)	91

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159	Instrument, dated March 11, 1880, executed by Robert F. Cutting, relinquishing and assigning to H. E. Gawtry, all his right and interest by intermediate assignments from John Cox, John J. Turner, Edgar Brower, Charles E. Loew and Mathew T. Brennan, original grantees under the Act of 1871. (Complainant's Exh. 159 in prior case, S. M. 159)	91
160	Instrument, dated March 11, 1880, executed by William Bayard Cutting, relinquishing and assigning to O. Ottendorfer all his rights and interests as assignee of William Foster, Jr., James M. Johnson, Eben F. Bacon, Charles E. Appleby, Henry H. Porter and Samuel J. Young, the survivors of Paschal W. Turney, deceased, of which Turney was owneer of intermediate assignments from Thomas Avery, John Balmore, James S. Turner, William Johnson and Peter H. F. Baxter, Jr., original grantees under the Act of 1871. (Complainant's Exh. 160 in prior case, S. M. 159) [fol. 3024]	92
161	Instrument, dated March 11, 1880, executed by George Howes, relinquishing to S. C. Thompson and assigning all his right and interest by intermediate assignments from William Vail, William H. Murphy, Patrick Quinn, George Chivvis, John Johnston and William Higgins, original grantees under the Act of 1871. (Complainant's Exh. 161 in prior case, S. M. 160)	92
162	Instrument, dated March 10, 1880, executed by John Sickels, transferring and assigning to Peter Gardner all	

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	his interests and rights by intermediate assignment from Edward Taylor, Joseph Murphy, Walter Smith, Joel A. Fithian and William H. Bloom, original grantees under the Act of 1871. (Complainant's Exh. 162 in prior case, S. M. 160)	92
163	Resignation, dated March 11, 1880, executed by W. Bayard Cutting, M. Bayard Brown, R. Fulton Cutting, William W. Moir, Oliver P. C. Billings, John Sickels and George Howes, being members of the Executive Committee holding office under Section 3 of Chapter 944 of the Laws of 1871, releasing, relinquishing and assigning all the rights, powers and control which had been acquired by the assignors, or which they could in any way exercise or have as such Executive Committee, to O. Ottendorfer, H. E. Gawtry, Philip Allen, Charles G. Francklyn, Peter Gardner, S. C. Thompson and their assigns. (Complainant's Exh. 163 in prior case, S. M. 161)	93
164	Certificate of Incorporation of The Harlem Gas Light Company, dated February 1, 1885, for manufacturing and supplying gas for lighting the streets and public and private buildings and for other purposes, situated and being in all that part of the city and County of New York, lying north of the center line of 79th Street, in said City; filed in the Secretary of State's office , and in the New York County Clerk's office, February 2, 1855. (Complainant's Exh. 164 in prior case, S. M. 161)	93

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165	Certificate of Increase of Capital Stock of The Harlem Gas Light Company, dated July 6, 1855. (Complainant's Exh. 164a in prior case, S. M. 162)	94
166	Certificate of Increase of Capital Stock of the Harlem Gas Light Company, dated July 21, 1869. (Complainant's Exh. 165 in prior case, S. M. 162)	94
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167	Resolution of the Mayor, Aldermen and Commonalty of the City of New York, granting to The Harlem Gas Light Company authority to lay conductors in the streets, etc., adopted March 26, 1855; also resolution of same purport adopted April 25, 1855. (Complainant's Exh. 166 in prior case, S. M. 163)	94
168	Extract from Minutes of the Special Meeting of Stockholders of the Consolidated Gas Company of New York, held March 9, 1900, setting forth resolution authorizing an increase of the capital stock of the company from $39,078,000 to $54,595,200 par value, and the use of the increase of capital stock ($15,517,200 par value) to redeem 4% debentures issued for the stock of the New York Gas and Electric Light, Heat and Power Company (aggregating $36,000,000 par value). (Complainant's Exh. 167 in prior case, S. M. 163)	95
169	Certificate of Increase of Capital Stock of the Consolidated Gas Company of New York from $39,078,000 to $54,595,200 par value, dated March 9, 1900, filed in the Secretary of State's office March 12, 1900, and in	

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170	Extract from Minutes of a Special Meeting of the Stockholders of the Consolidated Gas Company of New York, held July 16, 1900, setting forth resolution authorizing an increase of the capital stock of the company from $54,592,200 par value to $80,000,000 par value for various general purposes. (Complainant's Exh. 169 in prior case, S. M. 164	96
171	Certificate of Increase of Capital Stock of Consolidated Gas Company from $54,595,200 par value to $80,000,000 par value, dated July 16, 1900; filed in the Secretary of State's office July 18, 1900; and in the New York County Clerk's office July 19, 1900. (Complainant's Exh. 170 in prior case, S. M. 165)	96
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172	Extract from Minutes of a Special Meeting of the Stockholders of the Consolidated Gas Company of New York, held June 2, 1904, setting forth a resolution authorizing an increase of the capital stock of the company from $80,000,000 par value to $100,000,000 par value, and $20,000,000 par value of coupon debentures convertible into the stock authorized as an increase, the proceeds to be used for various general purposes (Complainant's Exh. 171 in prior case, S. M. 165)	97
173	Certificate of Increase of the Capital Stock of the Consolidated Gas Company of New York from $80,000,000 par value to $100,000,000 par value,	

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	dated June 2, 1904; filed in the Secretary of State's office June 6, 1904, and in the New York County Clerk's office June 7, 1904. (Complainant's Exh. 172 in prior case, S. M. 166)	97
174	Certificate of Increase of Capital Stock of the Consolidated Gas Company, dated May 25, 1914, from $100,000,000 par value to $125,000,000 par value, filed in the Secretary of State's office, and in the office of the Clerk of the County of New York on May 28, 1914. (Complainant's Exh. 173 in prior case, S. M. 169)	98
175	Order made by Public Service Commission for the First District, December 1, 1914, in Case 1823, authorizing the Consolidated Gas Company of New York to issue $25,000,000 debentures and $25,000,000 capital stock	98
176	Order of the Public Service Commission for the First District made March 30, 1921, in Case No. 2459, authorizing issue of $15,000,000 Ten-year Seven Per Cent Debentures	99
177	Order of the Public Service Commission, made December 7, 1922, in Case No. 992, authorizing the issue of $15,000,000 aggregate par value of Six Per Cent Cumulative Participating Preferred Stock, and cancelling authorization of March 30, 1921 in Case No. 2459, authorizing issue of $15,000,000 Ten-year Seven Per Cent Debentures	99
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178	Certified copy of Certificate of Increase and Classification of Capital Stock of the Consolidated Gas Company of New York, dated December	

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	4, 1922, from $125,000,000 par value to $140,000,000 par value, to be divided into 1,250,000 shares of common stock of the par value of $100 each and 300,000 shares of Six Per Cent Cumulative Participating Preferred Capital Stock of the par value of $50 each. Filed in the office of the Secretary of State December 5, 1922—filed in the office of the New York County Clerk, December 6, 1922	100
179	Order of the Public Service Commission made December 7, 1922, in Case No. 991, authorizing the Consolidated Gas Company of New York to issue 500,000 shares of common capital stock without nominal or par value, to realize net proceeds of $25,000,000	100
180	Order of the Public Service Commission made December 8, 1922 in Case No. 1004, authorizing the issue by the Consolidated Gas Company of New York of 2,500,000 shares of common capital stock without par value in exchange for 1,250,000 shares of outstanding common capital stock of the value of $100 per share	100
181	Certified copy of Certificate of Amendment by Consolidated Gas Company of New York pursuant to Section 24 of the Stock Corporation Law, dated December 9, 1922. Filed in the office of the Secretary of State, December 13, 1922—filed in the office of the New York County Clerk, December 14, 1922	101
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183	Deed from the City Real Estate Company to the Consolidated Gas Company of New York, dated September 8, 1916, for property known as 142 East 15th Street, being the Easterly extension of the General Office Building and lying in Block 870, Section 3 of the Land Map of the City of New York, recorded in the office of the Register of New York, in Section 3, Liber 203, page 293, Block 870, on the 14th day of September, 1916	102
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185	Deed from Charles W. Weston and Edith S. Weston and Grace W. Cornwell to the Consolidated Gas Company of New York, dated April 5, 1921, covering property lying and being in Section 1, Block 239 on the	

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	Land Map of the City of New York, known as No. 82 Elizabeth Street, New York City, recorded in the office of the Register of the County of New York on April 6, 1921, in Liber 3221, page 257 of Conveyances, Block 239, on the Land Map of the County of New York	103
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187	Deed from Fanny N. B. Adrian, by Charles K. Beekman, as committee, etc., to Consolidated Gas Company of New York, dated January 24, 1924, recorded in the New York County Register's office, January 31, 1924, in Liber 3391, page 359 of Conveyances, covering the same property as last preceding deed	104
188	Deed from the Bronx Terminal Corporation and others to the Consolidated Gas Company of New York, dated October 16, 1923, conveying certain pieces and parcels of land at Hunt's Point, Bronx County, recorded in the office of the Register of the County of The Bronx in Liber 422 of Conveyances, page 118, under Section 10, Block- Nos. 2775E, 2775F, 2275G, 2775H, 2775J, 2778, 2780, 2781, 2770, 2776; being a part of the	
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189	Deed from the Hunt's Point Dock Company to the Consolidated Gas Company of New York, dated December 27, 1922, conveying eight parcels of land at Hunt's Point, The Bronx; recorded in the office of The Register of the County of Bronx, on October 1, 1923, in Liber 407 of Conveyances, at page 247 and indexed in Section 10 under Block-Nos. 2775E, F, G and H and 2777 H and G, 2778-2780-2781, 2770-2776; being a part of the Hunt's Point property	105
190	Deed from the Hunt's Point Dock Company to the Consolidated Gas Company, dated December 27, 1922, conveying certain parcels of land at Hunt's Point, The Bronx; recorded in the office of the Register of the County of the Bronx, October 1, 1923, in Liber 407 of Conveyances, page 250, Section 10, Block- Nos. 2680, 2781, 2775G, 2778; being a part of the Hunt's Point property	106
191	Deed from the Municipal Mortgage Company to the Consolidated Gas Company of New York, dated June 25, 1923, conveying certain lots of land in the Borough of The Bronx, at Hunt's Point; recorded in the Register's office of Bronx County, lot numbers 2772C, E, B, 2775D, E, F, G, and H, 2776, 2777, 2778, 2780, 2781, 2777H and 2777J; being a part of the Hunt's Point property	106
192	Deed from Bigenuf Bungalows Inc. to the Consolidated Gas Company of New York, dated June 20, 1923; conveying certain lots of land in the	

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193	Deed from the Bigenuf Bungalows Inc. to the Consolidated Gas Company of New York, dated June 20, 1923, and conveying certain lots in the Borough of The Bronx; recorded in the office of the Register of the County of New York, on the 1st of October, 1923, in Liber 407 of Conveyances, page 246, in Section 10, Block- Nos. 2770, 2776 and 2781, being a part of the Hunt's Point property	107
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194	Deed from the Bigenuf Bungalows Inc. to the Consolidated Gas Company of New York, dated June 20, 1923, and recorded in the Register's office of the County of The Bronx on the 1st day of October, 1923, in Liber 407 of Conveyances, page 240, Section 10, Block Nos. 2770, 2776 and 2781 being a part of the Hunt's Point property	108
195	Deed from the Consolidated Gas Company of New York to the New York Edison Company, covering parcels of land in the Borough of Manhattan, City of New York, between 14th and 15th Streets, Avenue C, and the East River, contained in Blocks 982, 988 and 991, Section 3 on the Land Map of the County of New York, and recorded in the Register's Office of the County of New York, on De-	

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	cember 4, 1923, in Liber 3378, page 347, of Conveyances, Block Nos. 982, 988 and 991 on the Land Map of the County of New York	108
196	Deed from the Consolidated Gas Company of New York to the New York Edison Company, dated October 30, 1923, covering the property bounded by 11th Avenue, 41st Street and 42nd Street and the Hudson River together with land under water, wharfage rights, etc	109
197	Deed from Standard Gas Light Company to Consolidated Gas Company of New York, dated November 12, 1923, recorded in New York County Register's Office, November 16, 1923, covering Lot 16 of Block 1998, property located between West 131st Street and West 132nd Street, east of Twefth Avenue, adjacent to part of holder site	109
198	Order made by Public Service Commission, August 17, 1922, in Case 680, consenting to the transfer by the New York Mutual Gas Light Company of its works and system, as set forth in its petition verified May 16, 1922, to the Consolidated Gas Company of New York, as of February 28, 1922	110
199	Petition, dated May 16, 1922, by the New York Mutual Gas Light Company to the Public Service Commission, for consent to the transfer of the works and property of the New York Mutual Gas Light Company	
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200	Notification, executed August 23, 1922, by the Consolidated Gas Company and the New York Mutual Gas Light	

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	Company, filed with the Public Service Commission, in compliance with the Order in Case No. 680, dated, August 17, 1922, accepting the Order of the Commission with all its terms and conditions	110
201	Report, dated October 28, 1922, by the Consolidated Gas Company of New York and the New York Mutual Gas Light Company, pursuant to Paragraph 3 of the Order made by the Commission in Case No. 680 on August 17, 1922, setting forth certain data as to the consummation of the transfer	111
202	Deed from the New York Mutual Gas Light Company to the Consolidated Gas Company of New York, dated August 31, 1922. The land affected by the said instrument being the 11th Street Mutual Works lying in Section 2 in Blocks 368, 369 and 382 on the Land Map of the County of New York, recorded in the office of the Register of the County of New York, October 2, 1922, in Liber 3300, page 339 of Conveyances, Block Nos. 368, 369 and 382	111
203	Schedules of gas rates of the Consolidated Gas Company of New York, issued, posted and filed October 5, 1918, in pursuance of Order of the Public Service Commission for the First District in Case No. 2330, dated September 17, 1918, identified as Con. G. Co. No. 1, containing Sixth revised sheet No. 3 (cancelling Fifth revised sheet No. 3, effective March 1, 1921) date of issue June 30, 1921, date effective August 1, 1921, and establishing rate of $1.25 per thousand cubic feet of gas	113

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205	Order made by Public Service Commission June 8, 1921, in Case No. 79, directing the filing of various data, including copies of oil and coal contracts	114
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206	Order made by Public Service Commission, February 1, 1922, in Case No. 79, Matter of gas rates in the City of New York and suburban territory, and in Case No. 79-G, Matter of gas rates for gas of Consolidated Gas Company of New York, directing a hearing	114
207	Order made by Public Service Commission, June 8, 1921, in Case No. 108, In the "Matter of standards of purity, illuminating power and heating power of gas, and standards for the measurement thereof in the City of New York and suburban territory," directing a hearing as to gas standards, etc.	114
208	Order made by the Public Service Commission, August 30, 1922, in Case No. 108, prescribing a 537 minimum average B. t. u. standard for gas in New York City and suburban territory	115
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211	Report by the Public Service Commission, dated August 30, 1922, In the Matter of gas rates in the City of New York and suburban territory. (Case No. 79)	116
212	Report by the Public Service Commission, dated August 30, 1922, In the Matter of standards of purity, illuminating power and heating power for gas, and standards for the measurement thereof, in the City of New York and suburban territory. (Case No. 108)	117
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213	Communication, dated September 1, 1922, from Francis E. Roberts, Secretary, Public Service Commission, to Consolidated Gas Company of New York, transmitting and serving upon Consolidated Gas Company of New York a certified copy of the Order of the Commission, dated August 30, 1922, in Case No. 108, In the Matter of gas standards, etc.	117
214	Notification, dated September 12, 1922, from the Consolidated Gas Company to the Public Service Commission,	

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215	Communication, dated September 1, 1922, from Francis E. Roberts, Secretary, Public Service Commission, to Consolidated Gas Company of New York transmitting and serving certified copy of the Order of August 30, 1922, in Case No. 79, as to rates	118
216	Notification, dated September 13, 1922, by Consolidated Gas Company of New York, accepting the Commission's Order of August 30, 1922, in Case No. 79, relative to gas rates	118
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219	Order made by Public Service Commission, June 4, 1923, in Case No. 1360, "In the Matter of rates to be charged for gas in the City of New York," directing compliance with the provisions of Chapter 899 of the Laws of 1923, in relation to charges for gas in cities of over one million inhabitants	119
220	Order made by Honorable Francis A. Winslow, U. S. D. J., dated August 7, 1923, for the inspection and production of documents, etc.	119
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221	Letter, dated August 6, 1923, from Mr. Judson A. Hyatt, Special Deputy Attorney-General, to Mr. Jacob H. Goetz, transmitting certification by Civil Service Commission of certain employees of the office of the Attorney-General, together with the enclosures therein referred to. (See correspondence file)	126
222	Letter, dated August 18, 1923, from Mr. Goetz to Mr. Hyatt, transmitting original permits for inspection of properties and examination of books and records of Consolidated Gas Company, New Amsterdam Gas Company, The East River Gas Company of Long Island City, Central Union Gas Company, Northern Union Gas Company and The Standard Gas Light Company	120
223	Letter, dated December 27, 1923, from Mr. Donnelly to Mr. Ransom, requesting the issuance of permits for the examination by engineers and and accountants in behalf of the Attorney-General of properties, books and records of the Astoria Light, Heat & Power Company, together with a copy of the letter therein referred to, dated September 1, 1923, from Mr. Mark Wolff, an accountant for the Attorney-General, to Mr. Davidson, Assistant Secretary of the Consolidated Gas Company. (See correspondence file)	121
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229	Deed from John D. Crimmins to The Astoria Light, Heat & Power Company, dated January 21, 1899, for a large tract of land at Lawrence Point, Astoria. Recorded in Queens County Clerk's office in Liber 1211, of Deeds, page 112, January 24, 1899	122
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234	Deed from the Consolidated Gas Company of New York to The Astoria Light, Heat & Power Company, July 18, 1902, recorded in Liber 1282, page 341 of Conveyances, July 23, 1902, Queens County Clerk's office	124
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239	Certified copy Certificate of Incorporation of the Citizens Mutual Gas Light Company of Long Island City, dated September 13, 1879	126
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2nd 975	Book entitled "Consolidated Gas Company Appraisal of John J. Boylan, Plaintiff's Exhibit No. 975—7-11-1924."	6771
2nd 976	Book entitled "Consolidated Gas Company Appraisal of Martin McHale, Plaintiff's Exhibit No. 976—7-11-1924."	6784

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977	Portion of Annual Report of the Consolidated Gas Co. of N. Y. to the Public Service Commission for year ended December 31, 1921, which was not marked in evidence as Defendants' Exhibit 53	7029
978	Report of Consolidated Gas Co. of N. Y. to the Public Service Commission, for 1920, of which portions are in evidence as Defendants' Exhibit 52	7029
979	Portions of Report of Consolidated Gas Co. of N. Y. to Public Service Commission, for 1919, which relate to Operating Expenses. (Defendants' Exhibit No. 51)	7029
980	Report of Consolidated Gas Co. of N. Y. to Public Service Commission, for 1918, in respect of fixed capital	7030
981	Portion of Report of Consolidated Gas Co. of N. Y. to Public Service Commission, for 1918, in respect to operating expenses	7030
982	Such portions of the Annual Reports of the Astoria Light, Heat & Power Co. to Public Service Commission for the year 1923 as were not offered in evidence by the defendant Attorney General	7031
983	Such portions of the Annual Report of the Astoria Light, Heat & Power Co. at Public Service Commission for the year 1922, as were not offered in evidence by the defendant Attorney General. (Defendants' Exhibit 72)	7032
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984 for id.	Similar portion of Astoria Light, Heat & Power Co.'s Reports for the year 1921. (Defendants' Exhibit 71)	7032

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987	Entire Report of the Astoria Light, Heat & Power Co. to the Public Service Commission for the year 1918	7033
988 for id.	Portion of above report which relates to Operating Expenses	7033
	Exhibits 984, 985, 986 and 988 for id. were marked in evidence	7202
989 for id.	Map of the Borough of Manhattan, showing area testified to by Mr. Earnest Eddy	7324
990 for id.	Square sheet of blank paper used by Mr. Eddy in connection with above map	7324
991	Working papers of Mr. Martin McHale with respect to computations in the figures given for the value of the land at the plant of the New York Mutual Gas Light Co., including Lot 14	7466
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993	Chapter 129 of the Laws of 1801	7567
994	Chapter 86 of the Laws of 1813	7567
995	Chapter 166 of the Laws of 1826	7567
996	Chapter 763 of the Laws of 1857	7567
997	Chapter 552 of the Laws of 1860	7567
998	Answer of the Mayor, Aldermen and Commonalty of the City of New York in the case of Knott against Thayer, et al., as printed in the Willard Parker Hospital case record in the Court of Appeals at pages 414 to 429 inclusive, this answer being verified March 21, 1851	7567

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999	Report of the Commission on Commerce and Navigation of the Senate of the State of New York, dated March 17, 1856, as printed on pages 321 to 330, inclusive, of the record on appeal in the Willard Parker Hospital case in the Court of Appeals	7567
[fol. 3084]		
1000	Resolution of the Common Council of the City of New York, changing the map and plan of the City and exterior line thereof, as printed on pages 319 to 320, inclusive, of the record on appeal in the Court of Appeals in the Willard Parker Hospital case, that resolution having been approved by the Mayor, December 31, 1856	7569
1001	Resolution of the Common Council of the City of New York, approved by the Mayor, March 11, 1857, as printed in the record on appeal in the Court of Appeals in the Willard Parker Hospital case at page 330	7569
1002	Sheet No. 5 of the Atlas of New York Harbor from East 9th Street to East 20th Street, as was shown on the Harbor Commissioner's Map of 1857, such sheet being found at page 500 of the record on appeal in the Court of Appeals in the Willard Parker Hospital case	7569
1003	Map showing the pier and bulkhead lines in the East River as approved by the War Department, June 9, 1903, and as found at page 552 of the record on appeal in the Court of Appeals in the Willard Parker Hospital case	7570

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1004	Form letter dated June 12, 1924, sent by the Consolidated Gas Company to the Atlantic Refining Company and several other companies	7575
1005	Letter dated May 22, 1924, from the Superintendent of the Electric Division of the N. Y. Central Railroad to Mr. W. R. Addicks	7575
1006	Letter dated May 24, 1924, from Mr. Addicks in reply to above letter	7575
1007 for id.	Folder of photostats entitled "New Building, 153d Street"	7579
1008	Letter dated June 21, 1924, from The Atlantic Refining Company to Mr. W. R. Addicks replying to Mr. Addicks' letter of June 12, 1924	7586
1009	Letter dated June 19, 1924, from the Gulf Refining Company to the Consolidated Gas Company of New York, replying to Gas Co.'s letter of June 12th	7587
1010	Letter dated June 17, 1924, from the Sinclair Refining Company to the Consolidated Gas Company, replying	
[fol. 3085]	to Gas Co.'s letter of June 12th	7587
1011	Letter dated June 25, 1924, from the Standard Oil Company to Mr. W. R. Addicks, replying to Letter of June 25, 1924, exercising option under contract	7587
1012	Letter dated June 25, 1924, from Consolidated Gas Company of N. Y. to the Standard Oil Company of New Jersey, re exercise of option	7587
1013	Letter dated June 20, 1924, from Standard Oil Company to Mr. W. R. Addicks	7588
1014	Letter dated June 23, 1924, from Sun Oil Co. to Consolidated Gas Co. of N. Y. in reply to Gas Co.'s inquiry of June 12, 1924	7588

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1015	Letter dated June 13, 1924, from The Texas Company to Consolidated Gas Company of N. Y. in reply to Gas Co.'s letter of June 12, 192-	7588
1016	Letter dated June 21, 1924, from The Tide Water Oil Company to Consolidated Gas Co. of N. Y. in reply to Gas Co.'s letter of June 12, 1924	7589
1017	Schedule marked "Plaintiff's Exhibit No. 888, with current prices, etc."	7603
1018	Schedule marked "Plaintiff's Exhibit No. 891, with current prices, etc."	7605
1019	Chart entitled "Consolidated Gas Company of New York, Average Actual Rates of Pay for all Mechanical Departments January 1, 1913 to June 30, 1924"	7614
1020	Chart entitled "Consolidated Gas Company of New York Index of Actual Prices Paid during the Period from January 1, 1922 to June 30, 1924 for 2 inch Wrought Iron Pipe (Mill Price), 1 inch Black Steel Pipe (Mill Price) and Gray Iron Castings"	7616
1021	Chart entitled "Consolidated Gas Company of New York, Index of Actual Prices Paid during the Period from January 1, 1922 to June 30, 1924, for Common Building Brick, Checker Brick, and 2 inch Rough Spruce Lumber"	7618
1022	Chart entitled "Consolidated Gas Company of New York, Index of Prices Actually Paid from January 1, 1922 and to be Paid upon Existing Contracts to March 31, 1925, for Anthracite Broken Coal, Gas Coal and Gas Oil"	7618

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1023	Letter dated June 26, 1924, from W. R. Addicks to the Public Service Commission with respect to the oil contracts	7619
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1024	Letter dated July 3, 1924 from the Public Service Commission to Mr. Addicks in reply to above	7619
1025	Statement entitled "Comparison of Astoria Water Gas Costs and Consolidated Water Gas Costs 28 Month Period—From January 1, 1922 to April 30, 1924"	7649
1026	Diagram showing water gas costs in Manhattan at the Consolidated plants and at the Astoria Plant	7651
1027	Statement entitled "Actual Production Cost, January 1, 1922 to April 30, 1924 (28 Months)." (Astoria Plant and Consolidated Plants)	7653
1028	Statement, consisting of five sheets, entitled "Mr. A. S. B. Little's computation of production cost on basis assumed by him, corrected so as to give effect to actual present prices of materials, and so forth"	7658
1029	Sheet No. 41 of Block Map of Taxes and Assessments of the City of New York, prepared by the Board of Taxes and Assessments by its Commissioners and surveyors, which map is labelled "Section 2, Volume 1, Block 316-383, Manhattan"	7699
1030	Photograph showing pump house, tar separator, tar tanks, etc., on Tompkins Street	7701
1031	Photograph of the water front at the plant of the New York Mutual Gas Light Company, taken from the pier	7702

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1032	Tabulation entitled "Comparison of Rates of Pay of Labor between those existing on June 1, 1923 and those of July 25, 1924"	7706
1033	Collection of advertisements during the month of July 1924, with respect to different classes of construction, taken from the morning edition of the New York World (2 sheets)	7706
1034	Tabulation entitled "North-Eastern Construction Company Comparison of Costs of the Principal Items of Construction June 1, 1923, and July 25, 1924. Purifier House 'O'—11th Street Plant Consolidated Gas Company"	7711
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1035	Six page Statement entitled "Statement showing Investment in the 11th, 21st and 99th Street Plants of the Consolidated and in the Plant of the Astoria Light, Heat and Power Company, from January 1, 1922 to April 30, 1924—For the Purpose of Determining the Cost of Carrying these properties per M cu. ft. of Gas Actually made at these Plants during the Period mentioned	7716
1036	Schedule entitled "Astoria Tunnel, Comparison of Estimates," prepared by Mr. J. Vipond Davies	7726
1037	Statement entitled "Cost of Astoria Tunnel Exclusive of Mains, Equipment, Head Houses, etc., to August 31, 1916—As shown by the Books of The Astoria Light, Heat and Power Company"	7764

[fol. 3088] Defendants' Exhibits

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1	Voucher No. 21640, dated September 12, 1923, for $726.15, for repairs of works and station structures at the 11th Street Station	5002
2	Voucher No. 21365, dated September 10, 1923, for $240.60, for repairs of works and station structures at the 11th Street Station	5002
3	Voucher No. 26908, dated November 19, 1923, for $180.93, for repairs of works and station structures at the 11th Street Station	5002
4	Voucher No. 20573, dated September 7, 1923, for $174.25, for repairs of works and station structures at the 11th Street Station	5002
5	Voucher No. 17515, dated July 24, 1923, bearing notation "Charged to repairs works and station structures, 99th Street works"	5011
6	Voucher No. 18857, dated August 8, 1923, bearing notation "Charged to repairs works and station structures, 99th Street works"	5011
7	Voucher No. 20403, dated September 1, 1923, bearing notation, "Charged to repairs works and station structures, 99th Street Works"	5011
8	Voucher No. 21362, dated September 13, 1923, bearing notation, "Charged to repairs works and station structures, 88th Street works"	5011
9	Voucher No. 15055, dated July 5, 1923, calling for semi-circular wire screens for sidewalk openings at works bearing endorsement "Repairs of works and station structures, 99th Street Station"	5015

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10	Voucher No. 18990, dated July 27, 1923, which calls for roofing and sheet metal work bearing endorsement "Repairs of works and station structures, 44th Street Station"	
[fol. 3089]		5022
11	Voucher No. 15206, dated June 20, 1923, which calls for changing counter screen, #270, and which bears upon the back the endorsement "Repairs of Buildings, 57th Street Branch"	5024
12	Voucher No. 28128, dated December 8, 1923, which calls for painting ceiling, skylights, sidewalls, pillars and window frames in rear half of first floor at 212 West 57th Street, $529, and which contains notation on the back, "Repairs of Buildings, 57th Street Branch"	5024
13	Voucher No. 28129, paid December 12, 1923, $490.90, referring to painting the ceilings and walls of all rooms, the second floor of the branch office at West 57th Street	5026
14	Authorization No. 228, dated August 15, 1923, which calls for repainting interior and exterior of office buildings at 2084 Third Avenue, and 175 East 114th Street, $1,893	5027
15	Authorization No. 228, dated August 15, 1923, which calls for Acme Sand Blasting Company cleaning brick and stone work in front of office buildings at 2084 Third Avenue, and 175 East 114th Street, $150	5027
16	Authorization No. 228, dated August 15, 1923, Richard Deeves & Son, Inc., repairing plastering in certain portions of office buildings at 2084 Third Avenue and 175 E. 114th Street, $750	5027

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17	Authorization No. 228, dated August 15, 1923, International Metal Works, replacing roofs of office buildings at 2084 Third Avenue, and 175 East 114th Street, $11,118	5027
18	Voucher No. 19788, dated August 27, 1923, bearing endorsement on back, "Repairs of Buildings, 111th Street Stable"	5029
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19	Voucher No. 14498, dated June 18, 1923, bearing endorsement on back, "Repairs of Buildings, Central Garage"	5036
20	Voucher No. 14499, dated June 13, 1923, bearing endorsement on back, "Repairs to stalls of 111th Street Stable"	5036
21	Paper prepared and read before the American Society of Civil Engineers by Mr. J. Vipond Davies	5364
22	Statement of details in re electric wiring from power house at Astoria to the head house	5432
23	Voucher No. 15186, dated June 12, 1923, from the P. H. & F. M. Roots Company, calling for repairs for 9½ exhausters Nos. 31, 612-3 and three other items, endorsed "Repairs Steam Engines, 99th Street Station"	5845
24	Voucher No. 23196, dated August 15, 1923, from the P. H. & F. M. Roots Company, calling for "To time and expenses repairing No. 9½ Roots Gas Exhausters Nos. 31, 610-3, at East 99th Street," bearing endorsement "Repairs Miscellaneous Equipment"	5845
25	Voucher No. 3426, dated January 14, 1924, from Geo. Rahmann & Co., calling for 2 Belts, each 49-8/12 feet 11	

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	inch Double Belting Lap X, bearing endorsement "Accounts charged, maintenance of steam engines"	5846
26	Voucher No. 18106, dated August 7, 1923, from H. C. Greenfield, calling for one piston rod, endorsed "Accounts charged: Repairs to Steam Engines 99th Street Station"	5848
27	Voucher No. 16823, dated July 5, 1923, from the Connelly Iron Sponge & Governor Company, endorsed "Accounts charged: Repairs miscellaneous equipment 63d Street Station"	5849
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28	Voucher No. 4207, dated January 23, 1924, from American Shaeffer & Bodenberg Corporation, endorsed "Accounts Charged: Maintenance of Water Gas Sets 99th Street Station"	5852
29	Voucher No. 18827, dated July 31, 1923, from Evens & Howard Fire Brick Co. for 14,000 St. Louis 9" squares, less freight, endorsed on back "Repair Steam Equipment"	5960
30	Voucher No. 18992, dated July 31, 1923, from Evens & Howard Fire Brick Co., for 76900 D M Clay in Sacks (625 Sacks), less freight, endorsed on back "Rep. Steam Equip."	5960
31	Voucher No. 20825, dated July 31, 1923, from Evens & Howard Fire Brick Co., for 2980 St. Louis 9 x 4½ x 1" Splits, etc. less freight, endorsed on back, "Rep. Steam Equipt."	5960
32	Voucher No. 20826, dated July 31, 1923, from Evens & Howard Fire Brick Co., for 10,000 St. Louis 9 Checker Squares, etc., less freight, endorsed on back, "Rep. Steam Equipt."	5960

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33	Voucher No. 25675, dated November 2, 1923, to Louisville Fire Brick Works from Con. Gas. Co., for 10,000 "Louisville 9" fire brick, endorsed on back, "Rep. Steam Equipt.'	5960
34	Voucher No. 4013, dated February 18, 1924, to National Meter Company from Con. Gas Co. for 1 1½" V. D. Empire Oil Meter #1661971, endorsed on back, "Main Br. App."	5960
35	Voucher No. 20586, dated September 6, 1923, from Buckeye Engine Company to Con. Gas Co. for 6 Governor Butts, etc., endorsed on back "Rep. Steam Equipt."	5960
36	Voucher No. 19345, dated August 22, 1923, to The Brown Instrument Co. from Con. Gas Co. for 1 Duplex Erc. Recorder, Chart #1120, etc., endorsed on back, "Water Gas Sets Access. Pyrometer Equipt."	5960
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37	Voucher No. 17326, dated July 26, 1923, to The Foxboro Co., Inc., from Con. Gas Co., for four 6" Indicating Gas Machine Gauges, Serial Nos. 62113-62114-62115-62116, endorsed on back "Rep. Gen."	5960
38	Voucher No. 1262, dated December 12, 1923, to Robins Conveying Belt Co., from Con. Gas Co., for 1 Length 310 ft. long of Robins 30" Durabelt Conveyor Belt, etc., endorsed on back, "Maintenance of Accessory Wks. Eqpt. 21st St. Sta."	5960
39	Schedule entitled "Consolidated Gas Rate Case, Summary of John J. Boylan's Appraisal" (consisting of four sheets—typewritten—on letterhead entitled "John J. Boylan, Appraiser Tax Specialist, 277 Broadway—Tel. 1823 Worth"	6755

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40	Maps marked Nos. 0 to 730, inclusive, showing the mains of the Consolidated Gas Company and affiliated companies, indicating the sizes of the mains and also the location of the mains in the streets and the relative position with respect to each other	6796
41	Table 250, Sheet No. 9, entitled "Consolidated Gas Company of New York, Table of Parallel Gas Mains in District Approximately One Mile Square, Between 14th and 34th Streets and Fifth and Tenth Avenues"	6816
41-A	Table 250, Sheet No. 10, entitled "Consolidated Gas Company of New York, Schedule of Mains Showing Details of Parallels of two Mains 3" to 16" in Diameter in District Between 14th and 34th Streets and Fifth and Tenth Avenues"	6816
41-B	Table 250, Sheet No. 11, entitled "Consolidated Gas Company of New York, Schedule of Mains Showing Details of Parallels of Three Mains, 3" to 16" in Diameter in District Between 14th and 34th Streets and Fifth and Tenth Avenues"	6816
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41-C	Table 250, Sheet No. 12, entitled "Consolidated Gas Company of New York, Schedule of Mains Showing Details of Parallels of 4 Mains 3" to 16" in Diameter in District Between 14th and 34th Streets and Fifth and Tenth Avenues"	6816
41-D	Table 250, Sheet No. 13, entitled "Consolidated Gas Company of New York, Schedule of Mains Showing Details of Parallels of 4 Mains 3" to 16" in Diameter in District Be-	

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	tween 14th and 34th Streets and Fifth and Tenth Avenues" superseding Sheet No. 13, Table 250	6816
41-E	Table 250, Sheet 14, entitled "Consolidated Gas Company of New York, Schedule of Mains showing Details of Parallels of 5 Mains 3" to 16" in Diameter in District Between 14th and 34th Streets and Fifth and Tenth Avenues"	6816
41-F	Table 250, Sheet No. 15, entitled "Consolidated Gas Company of New York, Schedule of Mains Showing Details of Parallel Mains, one, 3 to 16" in Diameter, with 1 or more Mains 16" to 48" in Diameter in District between 14th and 34th Streets and Fifth and Tenth Avenues"	6817
41-G	Table 250, Sheet No. 16, entitled "Consolidated Gas Company of New York, Schedule of Mains Showing Details of Parallel Mains, two or more, 3" to 16" in Diameter with 1 or more Mains 18" to 48" in Diameter in District Between 14th and 34th Streets and Fifth and Tenth Avenues"	6817
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42	Table 250, Sheet No. 4, entitled "Consolidated Gas Company of New York, Schedule of Gas Mains on Manhattan Island where a Consolidated Gas Company Main is paralleled on the same side of the street by one or more other gas mains"	6827
43	Table 250, Sheet No. 5, entitled "Consolidated Gas Company of New York, Schedule of Gas Mains of other than Consolidated Gas Company on Manhattan Island, where two or more mains parallel on same side of street"	6817
44	Table 251, Sheets 1, 2, 3 and 4, Summaries of Mains on Manhattan Island designated on Consolidated Gas System Maps	6818
45	Table 250, Sheets No. 1, 2 and 2-a, entitled "Consolidated Gas Company of New York, Study of Parallel Mains on Manhattan Island"	6831
45-A	Table 250, Sheet No. 3, entitled "Ratio of Length of Gas Mains in Parallel to Length of the Parallels, Manhattan Island"	6831
45-B	Table 250, Sheets Nos. 6, 7 and 8, entitled "Consolidated Gas Company of New York, Study of Parallel Mains in District bounded by Fourteenth Street, Fifth Avenue, Thirty-fourth Street and Tenth Avenue"	6831
46	Table 253, consisting of seven sheets, entitled "Consolidated Gas Company of New York, Schedule of Mains, Showing Number, Size, Company Owning and Length of Mains in Sundry Instances of Paralleling Gas Mains on Manhattan Island"	6831

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47	Table 252, consisting of four sheets, entitled "Parallel Mains, Consolidated Gas Co. and Affiliated Companies"	6832
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49	Table 260, Sheet No. 1—Monthly Index Numbers Based on First of Month Wholesale Prices, Jan. 1913 to 1922 inclusive by Groups of Commodities—Table prepared by Earnest Eddy	6931
50	Table 262, Sheet No. 1—Monthly Index Numbers Based on First of Month Prices, Jan. 1913, computed by Dun, Bradstreet and the Bureau of Labor Statistics—Table prepared by Earnest Eddy	6932
51	Public Service Commission Report for 1919	6948
52	Public Service Commission Report for 1920	6948
53	Public Service Commission Report for 1921	6948
54	Table No. 103, Sheet No. 1, entitled "Consolidated Gas Company of New York, Fixed Capital Additions and Retirements, 1919 to 1923, inclusive"	6948
55	Table No. 103, Sheet 1, Schedule A, entitled "Consolidated Gas Company of New York, Fixed Capital Additions, 1919 to 1923, inclusive"	6950
56	Table No. 103, Schedule B, Sheet No. 1, entitled "Consolidated Gas Company of New York, Fixed Capital Retirements, 1919 to 1923, inclusive"	6955
57	Table No. 103, Schedule C, Sheet No. 1, entitled "Consolidated Gas Company of New York, Fixed Capital,	

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	Installed Prior to December 31, 1908"	6955
58 58-A	Report to the State Tax Department designated under the title "Tangible Property Outside of streets, highways and public places" signed by H. M. Brundage, Secretary, on March 30, 1923 (Photostat Copy). Year 1922	6959
59 59-A	Report to the State Tax Department, Form S and Form B, photostat copies of tangible property outside of streets, highways and public places, reports called "Financial" —tangible property report signed by H. M. Brundage on March 31,	
[fol. 3096]	1924. Year 1923	6959
60	Table 223—Photostat copy entitled "Consolidated Gas Company, Comparative Summary of Value of Property for Purposes of Taxation 1922 and 1923 as Reported by the Company to the State Tax Department"	6960
61	Table 224—entitled "Consolidated Gas Company, Information Given by Company on Page 38 of 1922 and 1922 Reports"	6961
62	Table 225—entitled "Consolidated Gas Company of New York (Source:—1922 Report to State Tax Department)," consisting of two sheets	6962
63	Table 226—entitled "Consolidated Gas Company of New York (Source:—1923 Report to State Tax Dept.)" consisting of three sheets	6962
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[fol. 3102] PLAINTIFF'S EXHIBIT No. 1

Chap. 367

An Act to Authorize the Consolidation of Manufacturing Corporations

Passed May 28, 1884

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Any two or more corporations heretofore or hereafter organized under any general or special law of this state for the purpose of carrying on any kind of manufacturing business of the same or of a similar nature, are hereby authorized to consolidate such companies into a single corporation in the manner following: The respective boards of directors, or of the trustees, of any two or more of such corporations may enter into and make an agreement, under their respective corporate seals, for the consolidation of the said corporations, prescribing the terms and conditions thereof, the mode of carrying the same into effect, the name of the new corporation, the number of the trustees thereof (not less than 3 or more than 13), the names of the trustees who shall manage the concerns of the new company for the first year, and until others shall be elected in their places, the term of existence of such new company, not exceeding 50 years, the name of the town or towns, county or counties in which the operations of the new company are to be carried on; and if such companies [fol. 3103] proposed to be consolidated, or either of them, shall have been organized for the purpose of carrying on any part of their or its business in any place out of this state, and the said new company shall propose to carry on any part of its business out of this state, the said agreement shall so state, and it shall also state the name of the town or city and county in which the principal part of the business of said new company within this state is to be transacted; the amount of capital, the number of shares of the stock into which the same is to be divided (which capital shall not be larger in amount than the fair aggregate value of the property, franchises and rights of the

several companies thus to be consolidated, but which may be increased in accordance with the provisions of the act entitled "An act to authorize the formation of corporations for manufacturing, mining, mechanical or chemical purposes," passed February 17, 1848, and any acts amending the same, and the manner of distributing such capital among such consolidated corporations or the holders of the stock of the same, with, such other particulars as they may deem necessary.

Section 2. Such agreement of the directors shall not be deemed to be the agreement of the said corporations so proposing to consolidate until after it has been submitted to stockholders of each of such corporations respectively, separately, at a meeting thereof to be called upon a no- [fol. 3104] tice of at least 30 days, specifying the time and place of such meeting and the object thereof to be addressed to each of the said stockholders when their place of residence is known to the secretary, and deposited in the post-office, and published for at least 3 successive weeks in one of the newspapers published in each of the counties of this state in which either of the said corporations shall have its place of business, and has been sanctioned and approved by such stockholders by the vote of at least two-thirds in amount of the stockholders present at such meetings respectively, voting by ballot in regard to such agreement, either in person or by proxy each share of such capital stock being entitled to one vote; and when such agreement of the directors has been sanctioned and approved by each of the meetings of the respective stockholders separately, after being submitted to such meetings in the manner above mentioned, then such agreement of the directors shall be deemed to be the agreement of the said several corporations; and a sworn copy of the proceedings of such meetings made by the secretaries thereof, respectively, and attached to the said agreement, shall be evidence of the holding and of the action of such meetings in the premises. If any stockholder shall, at said meeting of the stockholders, or within 20 days thereafter object to the said consolidation and demand payment for his stock, such stockholder or said new company, if consolidation take [fol. 3105] effect at any time thereafter, may apply at any

time within 60 days after such meeting of the stockholders to the Supreme Court, at any special term thereof held in any county in which the said new corporation may have its place of business, upon at least 8 days' notice to the new company for the appointment of 3 persons to appraise the value of said stock, and said court shall appoint 3 such appraisers and shall designate the time and place of the first meeting of such appraisers, and give such directions in regard to the proceedings on said appraisement as shall be deemed proper, and shall also direct the manner in which payment for such stock shall be made to such stockholder. The court may fill any vacancy in board of appraisers occurring by refusal or neglect to serve or otherwise. The appraisers shall *meet* at the time and place designated, and they or any two of them, after being duly sworn honestly and faithfully to discharge their duties, shall estimate and certify the value of such stock at the time of such dissent as aforesaid, and deliver one copy of their appraisal to the said new company, and another to the said stockholder, if demanded; the charges and expenses of the appraisers shall be paid by the new company. When the new corporation shall have paid the amount of the appraisal, as directed by the court, such stockholder shall cease to have any interest in the said stock and in the corporate property of the said corporation, and the said stock may be held or [fol. 3106] disposed of by said new corporation.

Section 3. Upon the making, sanctioning and approving of the said agreement in the preceding sections mentioned in the manner therein required, and the filling of the duplicates or counterparts thereof, and of the verified copy of the proceedings of the meeting of the stockholders mentioned in the preceding section in the office of the clerk of the county in this State where the operations of such new corporation are to be carried on, and in the office of the Secretary of State, then, and immediately thereafter the said corporations agreed to be consolidated shall be merged into the new corporation provided for in the said agreement, to be known by the corporate name therein mentioned, and the details of such agreement shall be carried into effect as provided therein.

Section 4. Such new company shall possess the general powers and be subject to the general liabilities and restrictions expressed in the third title of the 18th chapter of the first part of the Revised Statutes, and shall be entitled to enjoy the rights, franchises and privileges possessed by each of the companies from which it has been formed, subject, however, to the liabilities, restrictions, duties and provisions expressed and contained in the act entitled "An act to authorize the formation of corporations for manufacturing, mining, mechanical or chemical purposes," passed February 17th, 1848, and the acts amend-[fol. 3107] ing or extending the same, so far as the same may be applicable to a corporation organized for the purposes expressed in the said agreement for consolidation, and for which said new company shall have been organized.

Section 5. Upon the consolidation of the said corporations and the organization of such new company, as hereinbefore prescribed, all and singular the rights, privileges, franchises and interests of every kind belonging to or enjoyed by the said several corporations so consolidated, and every species of property, real, personal and mixed, and things in action thereunto belonging mentioned in said agreement of consolidation shall be deemed to be transferred to and vested in and may be enjoyed by such new corporation, without any other deed or transfer; and such new corporation shall hold and enjoy the same, and all rights of property, privileges, franchises and interests in the same manner, and to the same extent, as if the said several companies so consolidated has continued to retain the title and transact the business of such corporations, and the title to real and personal estate, and rights and privileges acquired and enjoyed by either of the said corporations shall not be deemed to revert or be impaired by such act of consolidation, or anything relating thereto.

Section 6. The rights of creditors of any corporations that shall be so consolidated shall not in any manner be [fol. 3108] impaired by any act of consolidation, nor shall any liability or obligation for the payment of any money now due or hereafter to become due to any person or persons, or any claim or demand in any manner, or for any cause existing against any such corporation, or against

any stockholder thereof, be in any manner released or impaired; but such new corporation is declared to succeed to such obligations and liabilities and to be held liable to pay and discharge all such debts and liabilities of each of the corporations that shall be so consolidated, in the manner as if such new corporation had itself incurred the obligation or liability to pay such debt or damages; and the stockholders of the respective corporations so entering into such consolidation shall continue subject to all the liabilities, claims and demands existing against them as such at or before such consolidation; and no suit, action or other proceeding then pending before any court or tribunal in which any corporation that may be so consolidated is a party, or in which any such stockholder is a party, shall be deemed to have abated or been discontinued by reason of any such consolidation; but the same may be prosecuted to final judgment in the same manner as if the said corporations had not entered into the said agreement of consolidation; or the said new corporation may be substituted as a party in the place of any corporation so consolidated as aforesaid with any other corporation or corporations and [fol. 3109] forming such new corporation, by order of the court in which such action, suit or proceeding may be pending.

Section 7. Any new company organized under this act shall be permitted to prosecute or carry on any kind of business authorized by the charter of either of the companies which have been consolidated.

Section 8. This act shall take effect immediately.

[fol. 3110] PLAINTIFF'S EXHIBIT NO. 14

AT A TRIAL OF THE SUPREME COURT, PART XVI THEREOF, HELD AT THE COURT HOUSE, NEW YORK COUNTY, ON JUNE 12, 1917

Present: Hon. Edward J. Gavegan, Justice.

CONSOLIDATED GAS COMPANY OF NEW YORK, Plaintiff,

against

THE CITY OF NEW YORK, Defendant

Judgment

The issues in this action having been regularly brought on for trial before Mr. Justice Edward J. Gavegan, at a Trial Term of this Court, without a jury, pursuant to stipulation of the parties hereto dated February 16, 1917, and entered in the minutes of the trial hereof, and the said cause having been tried on March 1 and 2, 1917, and the Court having examined the pleadings and having heard the allegations and proofs of the parties, and having duly deliberated thereon, and having duly made and filed, on June —, 1917, in the office of the Clerk of New York County its decision, dated June 12, 1917, containing a statement of the facts found and the conclusions of law thereon, and directing judgment as hereinafter stated, and the plaintiff's costs having been duly adjusted in the sum of One hundred and sixty three 60/100 Dollars ($163.60/100); Now, on motion of Shearman & Sterling, the attorneys for the plaintiff, it is adjudged and decreed:

I. That the defendant and all persons claiming under it be forever barred from all claim to any estate in the premises described as follows:

Parcel 1. The block bounded by the northerly side of 14th Street, the westerly side of Avenue C, the southerly [fol. 3111] side of 15th Street and a line 413 feet westerly from and parallel with the westerly side of Avenue C.

Parcel 2. The block bounded by 14th Street, Avenue D, 15th Street, and Avenue C.

Parcel 3. The block bounded by Avenue D, 14th Street, the Existing Marginal Street, and 15th Street, extending

376.54 feet along the northerly side of 14th Street and 278.46 feet along the southerly side of 15th Street, together with the bulkhead rights and wharf rights on the East River between 14th and 15th Streets.

and in each and every part thereof, and from all claim to any interest or easement therein or lien or incumbrance thereupon or any part thereof of any kind or nature whatsoever.

[Paragraphs II and III of this Decree are not printed.]

[fol. 3112] IV. That the plaintiff have judgment against the defendant for the sum of One hundred sixty three and 60 100 Dollars ($163.60 100), costs of this action as taxed.

Enter.

E. J. G., J. S. C. Wm. F. Schneider, Clerk.

[Indorsed: Filed June 22, 1917.]

[fol. 3113] Plaintiff's Exhibit No. 16

Chapter 899, Laws of 1923

An act to Amend the Public Service Commission Law in relation to the Charge for Illuminating Gas in Cities Containing a Population of One Million or Over.

Accepted by the City

Became a law June 2, 1923, with the approval of the Governor.

Passed, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Chapter four hundred and eighty of the laws of nineteen hundred and ten, entitled "An act in relation to the public service commission and the transit commission constituting chapter forty-eight of the consolidated laws," is hereby amended by inserting therein a new section, to follow section sixty-seven, to be section sixty-seven-a, to read as follows:

67-a. Charge for Gas in Cities of One Million or More.—A gas corporation engaged in the business of manufacturing, furnishing or selling illuminating gas in a city containing a population of one million or over shall not charge or receive for gas furnished or sold in such city a sum per [fol. 3114] one thousand cubic feet in excess of one dollar, nor furnish in such city gas of a standard less than six hundred and fifty British thermal units per cubic foot, measured under normal conditions of temperature and atmospheric pressure. The public service commission, notwithstanding any other provision of this chapter, shall not allow a rate or charge in the case of such cities in excess of such sum.

2. This act shall take effect immediately.

[fol. 3115] PLAINTIFF'S EXHIBIT No. 44

Consolidation Agreement Between Various Companies Into Consolidated Gas Company of New York

Dated September 29, 1884

Filed in office Secretary of State, Nov. 10, 1884.
Filed in office N. Y. County Clerk, Nov. 10, 1884.

This agreement, made this twenty-ninth day of September, one thousand eight hundred and eighty-four, between the New York Gas Light Company, The Manhattan Gas Light Company, The Metropolitan Gas Light Company of the City of New York, The New York Mutual Gas Light Company, The Municipal Gas Light Company of New York, The Knickerbocker Gas Light Company and the Harlem Gas Light Company, each of which is a corporation duly organized and now existing under general or special laws of this State for the purpose of carrying on the manufacturing business of making and distributing gas, and herein styled the Consolidated Companies, or between two or more of said Companies the directors or trustees of which shall enter into this agreement and whose stockholders shall on or before November 10, 1884, sanction and approve of this agreement by the votes of two

thirds of the stockholders present at a meeting to be called for that purpose, pursuant to the provisions of the Act entitled "An Act to authorize the consolidation of manu- [fol. 3116] facturing corporations" passed May 28, 1884, witnesseth:

That said Companies so sanction and approving this agreement have agreed and do hereby agree to consolidate into one corporation under and in accordance with said Act of May 28, 1884, and the following are the terms and conditions of such consolidation and the mode of carrying the same into effect.

Article I. The said new corporation to be formed shall be called the Consolidated Gas Company of New York.

Article II. The number of the Trustees thereof shall be thirteen.

Article III. The names of the Trustees who shall manage the concerns of the new Company for the first year, and until others shall be elected in their places, are Charles Roome, Thomas K. Lees, Oscar Zollikoffer, John P. Kennedy, Charles G. Franklyn, Thomas Rutter, Harrison E. Gawtry, Percy R. Pyne, Samuel Sloan, James W. Smith, Henry Day, Arthur Leary and John P. Huggins.

Article IV. The term of the existance of the said corporation shall be Fifty years.

Article V. The operations of the said corporation shall be carried on in the City, County and State of New York.

Article VI. The amount of capital of the said new Company shall be Forty-five millions of dollars, which is the fair aggregate value of the property, franchises and rights of the several Companies above named, which are more [fol. 3117] particularly mentioned in Article VII of this agreement, or if either or any of such Corporations shall fail to sanction and approve this agreement, as provided in said Chapter 367 of the Laws of 1884, before November 10, 1884, then the capital of such new Corporation shall be as much less than forty-five millions as the amount thereof apportioned by Section VIII to either and all of such above named Companies so failing to sanction and approve this agreement. The capital shall be divided into four hundred

and fifty thousand shares of one hundred dollars each, or if any Company or Companies fail to sanction and approve this agreement as aforesaid, then into as many shares as the reduced amount of capital will make when divided into shares of one hundred dollars each.

Article VII. Upon the consolidation of such corporations and the organization of the new Company, all and singular the rights, privileges and interests of each of the Companies whose stockholders shall have sanctioned and approved of this agerement as hereinbefore expressed and as provided in Chapter 367 of the laws of 1884, including all the real estate belonging to such Company situate in the City of New York and elsewhere with all appurtenances belonging thereto, all lands and rights to lands under water, all leasehold property, all mains service pipes and meters, all patents and licenses or rights to use patents, all ma-
[fol. 3118] chinery, plant, tools, horses, wagons, carts and all other property used by said Companies in the manufacture of gas, all office furniture and stationery, maps, drawings of property and apparatus owned by each of said Companies at the present time, together with their and each of their corporate rights, franchises, licenses to lay mains, and pipes, and privileges of every kind whatever, reserving and expecting from the property of each such corporation only cash on hand, debts due to the Company and coal and other supplies not included in the schedules furnished for previous valuation shall be *b*ested in and be the property of the new corporation.

Article VIII. The said capital of forty-five millions of dollars shall be and is hereby apportioned among the said Consolidating Companies in full consideration of the property, franchises and rights of each of said Companies transferred to and vested in the new corporation by this agreement and described in Article VII thereof, as follows:

The New York Gas Light Company	$7,821,000
The Manhattan Gas Light Company	12,352,000
The Metropolitan Gas Light Company	7,422,000
The New York Mutual Gas Light Company	5,922,000
The Municipal Gas Light Company	5,276,000
The Knickerbocker Gas Light Company	3,104,000
The Harlem Gas Light Company	3,103,000

Of this sum the new corporation shall retain to its own [fol. 3119] use and dispose of the sum of one million five hundred thousand dollars, to wit, of fifteen thousand shares thereof for the purchase of supplies and as a working capital, in such manner as may be hereinafter provided.

The remainder of the capital of the said new Company shall be and is hereby allotted to and shall be distributed among the stockholders of such consolidated corporations as follows, viz:

To the Stockholders of the New York Gas Light Company	75,600 shares.
To those of the Manhattan Gas Light Company	119,400 shares.
To those of the Metropolitan Gas Light Company	71,750 shares.
To those of the Mutual Gas Light Company	57,250 shares.
To those of the Municipal Gas Light Company	51,000 shares.
To those of the Knickerbocker Gas Light Company	30,000 shares.
To those of the Harlem Gas Light Company	30,000 shares.

If there shall be any outstanding lien or incumbrance by way of mortgages, or otherwise, upon any of the lands of either of said consolidating companies or any outstanding certificates of credit or other indebtedness or obligation of either corporation at the time of the consolidation, as herein provided, then the said new corporation shall assume the payment of such liens, bonds or indebtedness. Such Consolidating Company may at the time consolidation takes effect, pay to the said new Company the amount of such liens bonds, obligations or indebtedness in cash, and in [fol. 3120] default of so doing said new Company shall retain in lieu of and as a satisfaction of said liens and indebt-ness for principal and interest to date of consolidation, and the sum to be distributed to stockholders shall be reduced accordingly. Such stocks so retained may be sold by the new corporation to provide means to pay such indebtedness.

The said amount of capital stock of the new Company to be received by the stockholders of each of the said Con-

solidating Companies according to the provision of this Article shall be divided among the said stockholders pro rata in proportion to the holdings of each stockholder in the stock of said Company at the time of the closing of the books of such Company previous to consolidation, and such division and distribution shall be made by the new corporation immediately after consolidation is perfected; provided that each stockholder upon and before receiving his or her proportion of stock aforesaid shall assign and deliver to said new corporation, to be cancelled, his or her certificate or certificates of stock in said Company so consolidated; it being understood that the delivery of such certificate and cancelling of same shall not be construed as preventing the consolidating companies or either of them from closing up its affairs and distributing its assets not assigned to said new corporation under any of the provisions of this agreement.

Should any such stockholders on such division of stock be entitled to a fraction of a share, a certificate of the ownership of such factional share shall be issued to him. Said [fol. 3121] certificate shall provide that when certificates of fractional shares equal to one or more shares shall be presented to said new corporation a full share or shares of stock equal in amount to such fractional shares shall be issued in place thereof, but such fractional shares shall not be entitled to any dividend until they are exchanged for full shares as aforesaid.

Each consolidating company shall at the time consolidation takes effect, furnish the new corporation with a list of its shareholders and the number of shares of stock of its company to which each is entitled.

Article IX. Each consolidating Company sanctioning this agreement shall as soon as this agreement has been sanctioned and approved by two or more companies convey to said new corporation, by deed duly executed and acknowledged so as to entitle the same to be recorded, all its property enumerated and described in Article Sevea of this agreement and shall furnish a map or maps with a description of all real estate and a particular schedule of all the other property and rights of property described in Article VII.

Article X. Each consolidating company shall furnish to the new corporation, attested by the signatures of the President of such Company, a full and complete statement of all liens or incumbrances upon the real estate of said Company and a particular list of all outstanding indebted-
[fol. 3122] ness and obligations of said Company, with a statement of any unsettled claims or pending law suits against the company.

Article XI. Should the Board of Directors or Trustees of either of said Companies named as parties to this agreement not enter into the same, or should two-thirds in amount of the stockholders of either of said Companies at a meeting thereof to be called as provided in Chapter 367 of the Laws of 1884, fail before November 10, 1884, to sanction and approve of this agreement, and should the Board of Directors of two or more of such Companies enter into this agreement under their respective corporate seals, and should two-thirds in amount of the stockholders of two or more of such companies before November 10, 1884, sanction and approve of this agreement, then the said last-named companies whose Directors have entered into this agreement and whose stockholders have so sanctioned and approved the same, shall and do agree to consolidate on the terms and in the manner in every respect as hereinbefore mentioned, except that the capital stock of said corporation shall be the aggregate amount of stock apportioned by Article VIII of this agreement to the Companies whose stockholders shall have sanctioned and approved this agreement as above stated, and such non-assenting company or companies shall not be a party or parties to this agreement, but this agreement as thus made shall be valid and binding upon such companies as shall by their Directors or
[fol. 3123] Trustees and stockholders legally assent to the same.

Article XII. The Trustees of the new corporation shall meet at No. 4 Irving Place, on the 10th of November, 1884, at one o'clock P. M. of that day, for the purpose of choosing officers of said new corporation and organizing the business of the same.

A majority of said Trustees shall constitute a quorum for the transaction of business. In case of failure of the

Trustees to meet on the said 10th day of November, a meeting of the same may be called by any three of said Trustees at the same place by a notice in writing addressed to each of said Trustees and left at his usual place of business or given to him personally.

Said Board of Trustees shall adopt by-laws which shall be in accordance with the laws of this State for the government of the business and affairs of said corporation and of the Board of Trustees, and such by-laws shall, among other things, fix the time for the annual meeting of the stockholders for election of Trustees and the number and duties of the officers of the corporation and the method of changing or adding to said by-laws.

Article XIII. All obligations and contracts of each of the Consolidating Companies shall be assumed by the new corporation.

[fol. 3124] Article XIV. Each of the said Consolidating Companies shall appoint one of their Directors, Trustees or officers as a member of a committee to be called the Adjusting Committee. This Committee shall choose a Chairman and Secretary, and shall have power to adjust and settle all questions of difference between all or any parties, and any disputes or claims which may arise out of or in perfecting said consolidation and which are not specifically provided for in this agreement. Should any of said Companies herein named fail before November 10, 1884, to sanction and approve this agreement, as provided in said Act, the person designated by such Company as a member of the Adjusting Committee shall cease to be a member of such Committee.

The decision of a majority of such Committee shall be binding on all the Consolidating Companies and all stockholders therein, as well as upon the new Corporation.

Article XV. Either Consolidating Company may transfer to the new corporation its money on hand, debts due to it, coal and other supplies and material on hand, at time of consolidation and not included in the Schedules furnished for previous valuations, or any portion of the same, and the same shall be paid for in stock, or partly in stock and partly in cash, as may be desired by such Company. Provided, however, that no stock shall be issued for such pay-

ment beyond the million and a half of capital reserved and mentioned in Article IX of this agreement. Notice of the [fol. 3125] desire to make such transfer shall be given to the Chairman of the Adjusting Committee before November 10, 1884.

The value of the property so transferred shall be determined by the Adjusting Committee. The money to be paid and the stock to be issued in payment therefor shall be distributed proportionately to the stockholders of such Consolidating Company at the same time and in the same proportion as such stockholders shall receive stock named in Article VIII of this Agreement. If any shares of stock remain after paying for such transferred property, they may be disposed of by the new corporation for the purposes aforesaid.

This agreement will be executed in different copies each of which shall be considered an original, the execution of one copy by one of the said Companies shall be considered a due execution of the same, although the execution by other companies shall be on another copy.

In testimony whereof, each of the said parties hereto have caused these presents to be signed by their respective Presidents or Vice Presidents and Secretaries and the seal of their respective corporations to be hereunto affixed.

The New York Gas Light Company, by Thomas K. [fol. 3126] Lees, President. Attest: Wm. J. Clark, Secretary. (L. S.) The Manhattan Gas Light Company, by Charles Roome, President. Attest: Jas. W. Smith, Secretary. (L. S.) The Metropolitan Gas Light Company of the City of New York, by O. Zollikoffer, President. Attest: O. F. Zollikoffer, Secretary. (L. S.) Municipal Gas Light Company of New York, by Charles G. Franklyn, President. Attest: Philip Allen, Secretary. (L. S.) The Knickerbocker Gas Light Company, by Harrison E. Gawtry, President. Attest: Sam'l J. Young, Secretary. (L. S.) The Harlem Gas Light Company, by Thomas Rutter, President. Attest: Wm. H. Osborn, Secretary. (L. S.)

STATE OF NEW YORK,
Office of the Secretary of State, ss:

I have compared the preceding with the original Consolidation Agreement forming the Consolidated Gas Com-
[fol. 3127] pany of New York, filed and recorded in this office on the tenth day of November, 1884, and do hereby certify the same to be a correct transcript therefrom and of the whole thereof.

Witness my hand and seal of office of the Secretary of State, at the City of Albany, this thirty-first day of October, one thousand nine hundred and one.

J. A. M. Mougin, Deputy Secretary of State. (Seal.)

STATE OF NEW YORK,
County of New York, ss:

I, William Sohmer, Clerk of the said County and Clerk of the Supreme Court of said State for said County, do certify, that I have compared the preceding with the original certificate of Consolidated Gas Company of New York, on file in my office, and that the same is a correct transcript therefrom, and of the whole of such original.

Indorsed and filed and recorded November 10th, 1884, 12h. 30m.

In witness whereof, I have hereunto subscribed my name and affixed my official seal, this 30th day of October, 1901.

Wm. Sohmer, Clerk. (Seal.)

[fol. 3128] PLAINTIFF'S EXHIBIT No. 175

At a stated meeting of the Public Service Commission for the First District duly held at its office, Number 154 Nassau Street, in the Borough of Manhattan, City and State of New York, on the 1st day of December, 1914.

Present: Edward E. McCall, chairman; Milo R. Maltbie, J. Sergeant Cram, George V. S. Williams, Robert C. Wood, commissioners.

Case No. 1823

In the Matter of the Application of the Consolidated Gas Company of New York, under Section 69 of the Public Service Commissions Law, for an Order Authorizing the Issuance of $25,000,000 Convertible Debentures and $25,000,000 Additional Common Capital Stock for the Purposes Therein Specified.

Order Authorizing the Issue of $25,000,000 Convertible Debentures and $25,000,000 Further Capital Stock

Section 1. Application having been made to the Public Service Commission for the First District by Consolidated Gas Company of New York under the provisions of the Public Service Commissions Law by its petition verified May 15, 1914 for the consent of the Commission to the issuance by said company of convertible debentures in denominations of $500 or multiples thereof aggregating the par value of $25,000,000 payable in five years, bearing interest at six per cent. per annum, convertible at the option of the holder into the capital stock of the said Consolidated Gas Company of New York three years from the date thereof or on any interest date subsequent thereto and within five years from the date thereof upon the basis of one share of said stock for each $100 par value [fol. 3129] of debentures surrendered and for the consent of the Commission to the issuance by said company of 250,000 shares of additional capital stock of the par value of $25,000,000 to enable the petitioner to redeem said debentures, and a hearing having been duly had upon said application before the Commission Honorable Edward E. McCall, Chairman, and Honorable Milo H. Maltbie, George V. S. Williams and Robert Colgate Wood, Commissioners, presiding; and it appearing to the Commission that the authorized capital stock of the said Consolidated Gas Company of New York has been duly increased from $100,000,000 to $125,000,000, of which $99,816,500 has been issued and is outstanding; and it being now the opinion of the Commission

(1) That the money to be procured by the said issue of the said convertible debentures of the said Consolidated Gas Company to the amount of $25,000,000 face value pay-

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able at a period of more than twelve months after the date thereof, and by the issue of the said capital stock of the said Consolidated Gas Company to the said amount of $25,000,000 par value for redemption of said debentures, is necessary to and reasonably required by said company for the discharge or lawful refunding of its obligations for acquisition of property or for reimbursement of moneys actually expended from income, or from other moneys in the treasury of the corporation not secured by or obtained from the issue of stocks, bonds, notes or other evidence of indebtedness, for acquisition of property, and particularly for the purposes which are hereinafter stated in this order; and

(2) That said purposes are not in whole or in part reasonably chargeable to operating expenses or to income.

Section 2. It is ordered that the Consolidated Gas Company of New York be and it hereby is authorized to issue its convertible debentures in denominations of $500 or mul- [fol. 3130] tiples thereof, aggregating the par value of Twenty-five million dollars payable in five years bearing interest at the rate of six per cent. per annum, convertible at the option of the holder into the Capital Stock of the Consolidated Gas Company of New York three years from the date thereof or on any interest date subsequent thereto and within five years from the date thereof upon the basis of one share of such stock for each one hundred dollars par value of debentures surrendered.

Section 3. It is further ordered that the Consolidated Gas Company of New York be and it is hereby authorized to issue its further capital stock to the amount of Twenty-five million dollars par value and that all the said capital stock hereby authorized shall be common stock of said company.

Section 4. It is further ordered that the said issue of convertible debentures hereby authorized and said issue of further capital stock hereby authorized, by the said Consolidated Gas Company of New York are authorized upon the conditions following and not otherwise, to wit:

First. That the said Consolidated Gas Company shall sell the said debentures so as to net the said company not less than the face value thereof and accrued interest and that the proceeds thereof shall be applied only to the following purposes, that is to say:

1. For the reimbursement of moneys actually expended from income or from other moneys in the treasury not secured or obtained from the issue of stocks, bonds, notes or other evidences of indebtedness for the following purposes:

(a) For the acquisition at par of capital stock of the New York Edison Company issued by authority of the Commission March 11, 1910 (Case 1218).	$5,102,400	
(b) For the acquisition at par of capital stock of the New York Edison Company and of the Astoria Light, Heat and Power Company out of a total issue of $25,300,000 authorized by the Commission May 4, 1914 (Cases 1717 and 1718)	12,397,600	$17,500,000
[fol. 3131] 2. To discharge $5,000,000 principal of its eight-months collateral trust notes (the proceeds of which were employed to discharge $5,000,000 par value of its twelve month collateral trust notes due August 10, 1913), or any renewal of said eight months collateral trust notes	$5,000,000	
3. To discharge the principal of its demand notes issued in 1906 and 1907	2,500,000	
		$25,000,000

Second. That the said Consolidated Gas Company shall issue the said capital stock hereby authorized only in order to redeem the said convertible debentures hereby authorized upon the basis of one share of such stock of the par value of $100 for each $100 face value of debentures surrendered.

Third. That the said Consolidated Gas Company of New York shall keep separate, true and accurate accounts show-

ing the receipt and application in detail of the proceeds of the sale or disposal of the debentures hereby authorized to be issued and on or before the tenth day of each month the company shall make verified reports to the Commission stating the sale or sales of said debentures during the previous month, the terms and conditions of sale, the moneys realized therefrom and the use and application of such moneys, and said accounts, vouchers and records shall be open to audit and may be audited from time to time by accountants and examiners designated for such purpose by the Commission.

Fourth. That the authority hereby given to issue said debentures shall apply only to debentures issued by the said company on or before the 31st day of December, 1914.

Fifth. That the authority hereby given to issue such further capital stock shall apply only to stock issued by the said company within five years from the said date of issue of the debentures hereby authorized and not later than December 31, 1919.

[fols. 3132 & 3133] Section 5. It is ordered that this order take effect on the 1st day of December, 1914, and, except as provided in the fourth and fifth paragraphs of Section 4 limiting the duration of the authority to issue such debentures and such stock hereby granted, continue in force until otherwise ordered by the Commission, and that within ten days after service upon it of a copy of this order said Consolidated Gas Company of New York notify the Commission whether the terms of this order are accepted and will be obeyed.

By the Commission.

Travis H. Whitney, Secretary. (L. S.)

[fol. 3134] Statement re Plaintiff's Exhibit No. 176

Order of the Public Service Commission for the First District made March 30, 1921, in Case No. 2459, authorizing the issue by the Consolidated Gas Company of New York, under Section 69 of the Public Service Commission,

of $15,000,000 aggregate principal amount of ten-year 7 per cent debentures.

(NOTE.—The printing of the text of this order is omitted.)

[fol. 3135] STATEMENT RE PLAINTIFF'S EXHIBIT NO. 177

Order of the Public Service Commission of the State of New York made December 7, 1922, in Case No. 992, authorizing the issue by the Consolidated Gas Company of New York of $15,000,000 aggregate par value of Six Per Cent. Cumulative Participating Preferred Stock, which may be sold at a price not less than the par value thereof to realize net proceeds of at least $15,000,000, and cancelling the authorization of March 30, 1921, by the Public Service Commission for the First District, in Case No. 2459, which authorized the issue of $15,000,000 Ten-year Seven Per Cent Debentures.

(NOTE.—The printing of the text of this order is omitted.)

[fol. 3136] STATEMENT RE PLAINTIFF'S EXHIBIT NO. 178

Certificate of Increase and Classification of Capital Stock of the Consolidated Gas Company of New York, date December 4, 1922, from $125,000,000 par value to $140,000,000 par value, to be divided into 1,250,000 shares of common stock of the par value of $100 each and 300,000 shares of Six Per Cent. Cumulative Participating Preferred Capital Stock of the par value of $50 each. Filed in the office of the Secretary of State December 5, 1922—filed in the office of the New York County Clerk, December 6, 1922.

(The printing of the text of this exhibit is omitted.)

[fol. 3137] PLAINTIFF'S EXHIBIT No. 179

STATE OF NEW YORK PUBLIC SERVICE COMMISSION

At a Session of the Public Service Commission Held in the City of Albany on the 7th day of December, 1922.

Present: William A. Prendergast, chairman; William R. Pooley, Charles Van Voorhis, Oliver C. Semple (in the negative), commissioners.

Case No. 991

In the Matter of the Petition of CONSOLIDATED GAS COMPANY OF NEW YORK, under Section 69, Public Service Commission Law, for Authority to Issue 500,000 Shares of Common Capital Stock Having no Nominal or Par Value

Petition—Filed November 28, 1922

Memorandum of Accounting Division, Dated December 6, 1922

Now, therefore, upon the foregoing record, ordered as follows:

1. That the Consolidated Gas Company of New York be and it hereby is authorized to issue 500,000 shares of its common capital stock without nominal or par value, which may be sold at not less than $50 a share to realize net proceeds of at least $25,000,000.

2. That the proceeds of said stock so authorized, which shall not be less than $25,000,000, shall be used solely and exclusively to discharge in part its outstanding obligations for money borrowed on short term notes as stated in paragraph 3 of petition, $25,000,000.

3. That the Consolidated Gas Company of New York shall for each six months period ending June 30 and December 31 file not more than thirty days from the end of such period a verified report which shall show:

[fols. 3138-3140] (a) What stock has been sold during such period.

(b) The dates of such sales.

(c) To whom such stock was sold.

(d) What proceeds were realized from such sales.

(e) Any other terms and conditions of such transactions.

(f) In detail the amount of the proceeds of the stock herein authorized which has been expended during such period for the purpose specified herein.

Such reports shall continue to be filed until all of said stock shall have been sold and the proceeds expended in accordance with the authority contained herein, and if during any period no stock was sold or proceeds expended, the report shall set forth such fact.

4. That the authority contained in this order to issue stock is upon the express condition that the petitioner accepts and agrees to comply in good faith with the provisions hereof and before any stock is issued pursuant hereto and within thirty days of the service hereof the Company shall advise the Commission whether or not it accepts the same with all its terms and conditions, and such order shall be of no force or effect until such acceptance has been filed.

Finally it is determined and stated, That in the opinion of the Commission the money to be procured by the issue of said stock herein authorized is reasonably required for the purpose specified in this order and that such purpose is not in whole or in part reasonably chargeable to Operating Expenses or to Income.

By the Commission.

(Signed) Francis E. Roberts, Secretary. (Seal.)

[fol. 3141] PLAINTIFF'S EXHIBIT NO. 180

STATE OF NEW YORK PUBLIC SERVICE COMMISSION

At a Session of the Public Service Commission Held in City of Albany on the 8th Day of December, 1922

Present: William A. Prendergast, Chairman, William R. Pooley, Charles Van Voorhis, Oliver C. Semple, Charles G. Blakeslee, Commissioners

Case No. 1004

In the Matter of the Application of THE CONSOLIDATED GAS COMPANY OF NEW YORK for an Order Authorizing the Issue of 2,500,000 Shares of Common Capital Stock Without Nominal or par Value in Exchange for the Outstanding Shares of Its Common Stock Having par Value.

Petition Filed December 8, 1922

Now, therefore, upon the foregoing record, ordered as follows:

1. That the Consolidated Gas Company of New York be, and it hereby is, authorized upon duly filing the certificate amending its certificate of incorporation, pursuant to section 24 of the Stock Corporations Law, as authorized at a meeting of stockholders held December 5, 1922, to issue 2,500,000 shares of its common capital stock without nominal or par value, in exchange for 1,250,000 shares of its outstanding common capital stock having a par value of $100 per share, upon the terms set forth in said consent of stockholders on file with the Commission in this case.

2. That the certificates evidencing the par value shares of stock shall, on delivery to the Company, be marked [fol. 3142] with some appropriate legend showing that they have been surrendered in exchange for a specified number of shares having no nominal or par value as authorized herein.

3. That the authority contained in this order is upon the express condition that the petitioner accepts and agrees to comply in good faith with the provisions hereof and within thirty days of the service hereof the Company shall advise the Commission whether or not it accepts the same with all its terms and conditions, and such order shall be of no force or effect until such acceptance has been filed.

By the Commission.

(Signed) Francis E. Roberts Secretary. (Seal.)

[fols. 3143 & 3143a] STATE OF NEW YORK,
Public Service Commission, ss:

I have compared the preceding copy with the original order of this Commission, dated December 8, 1922, in the matter of the application of the Consolidated Gas Company of New York, for an order authorizing the issue of 2,500,000 shares of common capital stock without nominal or par value, in exchange for the outstanding shares of its common stock having par value, on file in this office, and I do hereby certify the same to be a correct transcript therefrom and of the whole thereof.

Witness my hand and the seal of the Public Service Commission, at the city of Albany this eighth day of December one thousand nine hundred and twenty-two.

(Signed) Francis E. Roberts, Secretary. (Seal.)

[fol. 3144] STATEMENT RE PLAINTIFF'S EXHIBIT NO. 181

Certificate of Amendment by Consolidated Gas Company of New York pursuant to Section 24 of the Stock Corporation Law, dated December 9, 1922. Filed in the office of the Secretary of State, December 13, 1922—filed in the office of the New York County Clerk, December 14, 1922.

(The printing of the text of this exhibit is omitted.)

[fol. 3145] PLAINTIFF'S EXHIBIT NO. 182

STATE OF NEW YORK PUBLIC SERVICE COMMISSION

At a Session of the Public Service Commission Held in the City of New York on the 6th Day of December, 1923

Present: Hon. William A. Prendergast, Chairman; Hon. William R. Pooley, Hon. Charles Van Voorhis, Hon. James A. Parsons, Commissioners.

Case No. 1682

In the Matter of the Application of THE CONSOLIDATED GAS COMPANY OF NEW YORK, under Section 69 of the Public Service Commission Law, for an Order Authorizing the Issuance and Sale of 600,000 Shares of Common Stock Without Nominal or par Value for the Purposes Specified in the said Section

Petition filed November 17, 1923.
Memorandum of Accounting Division dated December 5, 1923.
Report of Engineering Division dated December 6, 1923.

Now, therefore, upon the foregoing record, ordered as follows:

1. That the Consolidated Gas Company of New York is hereby authorized to issue 600,000 shares of its common capital stock without nominal or par value, which may be sold at a price of not less than $50.00 per share to realize net proceeds of at least $30,000,000.

2. That the proceeds of said stock so authorized, which shall not be less than $30,000,000., shall be used solely and exclusively for the following purposes:

a. The works, distributing system and other property of The New York Mutual Gas Light Company, purchased with the approval and consent of the Commission (Case 680) for the sum, exclusive of working capital, of $10,010,630.72. Deducting from this amount $5,703,290 65, the petitioner's investment in the capital stock of the said Mutual Company leaves a net in- [fol. 3146] crease in the petitioner's corporate assets, on account of this purchase, which the petitioner now desires to capitalize of $4,307,340 07

b. Several tracks of land located at Hunt's Point, Borough of The Bronx, comprising about 184 acres, on which the petitioner intends to erect a gas plant to meet the future demands for gas, the details as to the

acquisition of which property and the need therefor being already known to the Commission.	2,265,103.00
c. Seven thousand and ninety (7,090) shares of the preferred stock, without nominal or par value, and Four hundred and fifty-six thousand seven hundred (456,700) shares of the common stock, without nominal or par value, of the Consolidated Telegraph and Electrical Subway Company.	23,189,500 00
d. Four thousand seven hundred and seventy-five (4,775) shares of the capital stock of the Bronx Gas and Electric Company, acquired with the approval and consent of the Commission (Case No. 2752) for the sum of $358,125.00 of which the petitioner desires to capitalize, at this time	238,056 93
Total	$30,000,000 00

3. That the Consolidated Gas Company of New York shall for each six months' period ending December 31 and June 30 file not more than thirty days from the end of such period a verified report which shall show:

(a) What stock has been sold during such period.
(b) The dates of such sales.
(c) To whom such stock was sold.
(d) What proceeds were realized from such sales.
(e) Any other terms and conditions of such sales.
(f) The amounts credited to stated capital as the result of the issuance and sale of the stock herein authorized.

4. This proceeding is hereby continued upon the records of the Commission until the examination which is to be made of the books and accounts and property of the petitioner herein shall have been concluded and the corrections, if any, which by reason of such examination this Commission shall determine to be proper and necessary to be made and accepted by the corporation and entered in its accounts to the satisfaction of the Commission.

[fol. 3147] 5. That the authority contained in this order to issue stock is upon the express condition that the petitioner accepts and agrees to comply in good faith with the

provisions hereof and before any stock is issued pursuant hereto and within thirty days from the service hereof the Company shall advise the Commission whether or not it accepts the same with all its terms and conditions, and such order shall be of no force or effect until such acceptance has been filed.

Finally it is determined and stated that in the opinion of the Commission the money to be procured by the issue of said stock herein authorized is reasonably required for the purposes specified in this order and that such purposes are not in whole or in part reasonably chargeable to Operating Expenses or to Income.

By the Commission,

Francis E. Roberts.

Case 1682

STATE OF NEW YORK,
Public Service Commission, ss:

I have compared the preceding copy with the original order of the Commission, dated December 6, 1923 in the matter of the application of the Consolidated Gas Company of New York, under Section 69 of the Public Service Commission Law, for an order authorizing the issuance and sale of 600,689 shares of common stock without nominal or par value for the purposes specified in the said section on file in this office and I do hereby certify the same to be a correct transcript therefrom and of the whole thereof.

Witness my hand and the seal of the Public Service Commission at the City of New York this seventh day of December one thousand nine hundred and twenty-three.

Francis E. Roberts, Secretary.

[fol. 3148] Consolidated Gas Company of New York, 130 East 15th Street, New York

H. C. Davidson, Secretaray

April 13th, 1926.

W. L. Ransom, Esq., 120 Broadway, New York, N. Y.

DEAR JUDGE: In accordance with telephone request from your office yesterday, I enclose herewith photostat copy of Order of the Public Service Commission in Case No. 1682,

which was offered in evidence as Exhibit No. 182 in the case of the Consolidated Gas Company of New York vs. Prendergast, et al.

Yours very truly, H. C. Davidson, F. L., Secretary.

L.

[fol. 3149] PLAINTIFF'S EXHIBIT No. 198

STATE OF NEW YORK PUBLIC SERVICE COMMISSION

At a Session of the Public Service Commission Held in the City of New York on the 17th Day of August, 1922

Present: William A. Prendergast, Chairman; William R. Pooley, Charles Van Voorhis, Oliver C. Semple, Charles G. Blakeslee, Commissioners.

Case No. 680

In the Matter of the Petition of THE NEW YORK MUTUAL Gas Light Company for Consent to the Transfer of the Works and System of Its Gas Plant to Consolidated Gas Company of New York (Which Joins in the Petition) Petition filed May 18, 1922.

Report of Engineering Division dated August 8, 1922. Memorandum of Accounting Division dated August 14, 1922.

Now, therefore, upon the foregoing record, ordered as follows:

1. That the consent of the Commission is hereby given that The New York Mutual Gas Light Company may transfer its works and system as set forth in its petition herein, verified the 16th day of May, 1922, to the Consolidated Gas Company of New York, and hereby permits and approves the transfer to the Consolidated Gas Company of New York of the works and system owned by The New York Mutual Gas Light Company as of February 28, 1922, for the sum of $9,012,275.37.

2. That immediately upon the consummation of such sale herein authorized and approved the Consolidated Gas Company shall file with this Commission a proper notice setting

forth the exact date when such sale was fully and finally consummated.

[fol. 3150] 3. That within thirty days after the purchase herein authorized shall have become effective, complete statements shall be filed with the Commission duly verified by the respective secretaries or other executive officers, which shall show:

(a) The exact date of such purchase.

(b) Details of the changes in the accounts of the New York Mutual Gas Light Company in so far as they record the changes in its property, assets and liabilities from February 28, 1922, to the actual date of the transfer of the property of that company to the Consolidated Gas Company of New York.

(c) Detailed balance sheet of the New York Mutual Gas Light Company as of the date when the transfer of its property to the Consolidated Gas Company of New York is recorded in its accounts.

(d) Particulars of the entries made upon the books of the Consolidated Gas Company of New York reflecting the acquisition of the property herein authorized to be purchased.

(e) Detailed balance sheet of the Consolidated Gas Company of New York as of such date.

4. That the Consolidated Gas Company of New York shall within a reasonable time after the consummation of the sale approved in this order file with the Commission all such annual or other periodic reports as the Commission may be required by law to obtain or which it is empowered by law to exact and shall require, concerning its operations and financial or corporate transactions or those of the New York Mutual Gas Light Company, during the period subsequent to the date of such report last filed and prior to the effective date for accounting purposes of the sale hereby approved.

[fols. 3151 & 3152] 5. That the authority contained in this order is upon the express condition that the petitioners, the New York Mutual Gas Light Company and Consolidated Gas Company of New York, accept and agree to comply in good faith with the provisions hereof and within thirty days of the service hereof said companies shall advise the Com-

mission whether or not they accept the same with all its terms and conditions, and such order shall be of no force or effect until such acceptances have been filed.

By the Commission.

(Signed) Francis E. Roberts, Secretary. (Seal.)

[fol. 3153] STATEMENT RE PLAINTIFF'S EXHIBIT NO. 199

(Statement.—This Exhibit embraces of a petition to the Public Service Commission of the State of New York, entitled "In the Matter of the Application of The New York Mutual Gas Light Company under Section 70 of the Public Service Commission Law, for the consent of the Commission to the purchase by the Consolidated Gas Company of New York of the works, distributing system, and certain other property of The New York Mutual Gas Light Company; and for consent of the Commission to the transfer of the said works, distributing system and other property of the Petitioner to the Consolidated Gas Company of New York."

The petition is endorsed by Carter, Ledyard & Milburn, attorneys for Minority Stockholders' Committee of The New York Mutual Gas Light Company; Whitman, Ottinger & Ransom, attorneys for The New York Mutual Gas Light Company, and Shearman & Sterling, attorneys for the Consolidated Gas Company of New York.

The exhibit consists of a petition dated May 16, 1922, signed by The New York Mutual Gas Light Company, by George W. Parkhurst, Vice President; Exhibit "A" thereto annexed, being a statements by the proposed recipient, Consolidated Gas Company of New York, verified May 16, 1922, by George B. Cortelyou, president of the Consolidated Gas Company of New York, and a member of its Board of Trustees and the Executive Committee of the said Board; Exhibit "B," being a report by representatives [fol. 3154] designated in equal number by the Consolidated Gas Company of New York and the Minority Stockholders' Committee of The New York Mutual Gas Light Company; Exhibit "C," being a statement of the financial condition

of The New York Mutual Gas Light Company as of December 31, 1921; Exhibit "D," being a statement of the financial condition of the Consolidated Gas Company of New York as of December 31, 1921; and Exhibit "E," being a copy of a "Minority Stockholders' Agreement of The New York Mutual Gas Light Company, dated June 1st, 1921.")

Exhibit "B," annexed to the petition, is as follows:

[fol. 3155] EXHIBIT "B"

Consolidated Gas Company of New York, George B. Cortelyou, President, 130 East 15th Street, New York City

Committee of Minority Stockholders of the New York Mutual Gas Light Company, Frederick H. Ecker, Chairman, 26 Broad Street, New York City.

DEAR SIRS: The undersigned representatives, designated in equal number by the Consolidated Gas Company of New York and The Minority Stockholders' Committee of The New York Mutual Gas Light Company, hereby report that they have reached agreement upon terms for the purchase by the Consolidated Gas Company of the plant, distributing system and certain other operating properties and assets of The New York Mutual Gas Light Company.

We respectfully recommend that, with the approval of the Public Service Commission, in the particulars indicated by law, The New York Mutual Gas Light Company sell, and the Consolidated Gas Company of New York purchase and acquire, as of a date to be hereafter determined, the property hereinafter indicated, upon the terms and conditions hereinafter set forth.

We have agreed that the price to be paid by the Consolidated Gas Company of New York for the specified property of The New York Mutual Gas Light Company should be in the aggregate sum of $9,012,275.37, subject to such changes in the assets and liabilities as shall be shown by the Company's accounts to have occurred between February 28, 1922, and the date determined by the Committee for the taking over of the property, and that payment be made in cash or by certified cheque upon the con-

summation of the transaction. The items making up the above stated sum are as follows:

(1)	Land	$1,487,730.67
(2)	Water Gas Manufacturing Plant (aside from buildings)	2,204,379.95
(3)	Buildings and appurtenances	542,772.89
(4)	Mains	2,054,663.40
(5)	Services	460,278.04
(6)	Meters, Cocks, etc	385,265.91
(7)	Stoves, etc	242,548.48

[fol. 3156]

(8)	Tools and Implements	12,672.11
(9)	Stable equipment, automobiles, etc	10,895.35
(10)	Office furniture and fixtures	22,258.28
(11)	Lamps	3,763.75
(12)	Omissions and contingencies	104,711.00
(13)	Organization and development prior to construction	457,203.00
(14)	Cost of financing	479,614.00
(15)	Engineering superintendence, and general contractor's expense and profit	624,265.32
(16)	Interest during construction	745,064.00
(17)	Taxes during construction	59,087.00
(18)	Administration, legal and miscellaneous general expenses during construction	132,671.00
	Total fixed capital Feb. 28, 1922	$10,029,844.15
(19)	Materials and Supplies, do.	299,654.78
(20)	Accounts Receivable, ...do.	263,430.59
(21)	Gas in holders and mains and furnished to consumers but not yet billed, do.	63,471.25
(22)	Fire Insurance Fund, do.	149,574.68
(23)	Liability Insurance Fund, do.	44,341.22
(24)	Municipal Lighting Co. Stock	400.00
	Total	$10,850,716.67

Less debts of the New York Mutual Gas Light Company Feb. 28, 1922:		
Accounts Payable	$249,923.17	
Taxes Accrued	420,994.61	
Interest on Taxes	22,071.22	
Consumers' Deposit	145,393.96	
Compensation on Liberty Bonds Borrowed	58.34	
Consolidated Gas Co. Loan	500,000.00	
Bills Payable	500,000.00	
		1,838,441.30
		$9,012,275.37

[fol. 3157] It will be noted that the foregoing agreed figures, in respect of items of fixed capital (aggregating $10,029,844.15), are based upon the values found by the United States District Court for the Southern District of New York, as of October 1, 1919, in The New York Mutual Gas Light Company's rate case ($9,669,480) plus net capital additions since that time ($360,364.15). The valuation found by the Court was based upon an inventory as of that date, with unit prices of materials and labor as of January 1, 1914, applied thereto. The accuracy of this inventory and these unit prices was not contested by the Public Service Commission or the Attorney-General of the State of New York, upon the trial of the action. The Master's findings and report in that case, adopted by the District Court stated that the present cost (in 1921) to reproduce the above-indicated property was substantially greater than the sum arrived at as above stated, and that The New York Mutual Gas Light Company was entitled to have its rates such as to earn a fair return upon such sum, over and above operating expenses. The Master further found:

"(33) It is not possible, on the record before me, to state with accuracy the entire original cost of the investment of the complainant company in its gas property. There is evidence that the property of the complainant used and useful in its gas business, constructed as it was from time to time to meet the growing requirements of the complainant's consumers, cost at least the sum herein found as the

cost of reproducing it at the prices for materials and labor prevailing as of January 1, 1914."

The findings of the Master and District Court were based upon an inventory and appraisal of the Mutual Company's [fol. 3158] property by Colonel Alten S. Miller, Vice-President of the Bartlett-Hayward Company, a firm of large experience in the construction and operation of gas properties.

Messrs. Ford, Bacon & Davis, the engineers who made an examination of the Mutual Company's property for the Committee of Minority Stockholders, have reported that such examination assured them of the existence of the property inventoried by Colonel Miller, together with the net additions since that time, and produced substantial agreement with the valuation reached by him. Messrs. Ford, Bacon & Davis also reported their agreement with the engineers of the Consolidated Gas Company and The New York Mutual Gas Light Company that the plant and property of the latter is in one hundred per cent operating condition and in a high state of repair, and is not subject to any diminution in value through any lack of operating efficiency. The property has been well-maintained by repairs, renewals and replacements as needed; the investment in the property remains intact, and no occasion exists for any deduction from the value found by the Court as hereinabove set forth.

Respectfully submitted.

(Signed) Geo. B. Cortelyou, John A. Garver, R. A. Carter, for the Consolidated Gas Company of New York. (Signed) Frederick H. Ecker, M. N. Buckner, John Y. G. Walker, by F. H. Ecker, Proxy and Att'y, for the Committee of Minority Stockholders of the New York Mutual Gas Light Co.

New York, May 11th, 1922.

[fol. 3159] PLAINTIFF'S EXHIBIT No. 200

STATE OF NEW YORK PUBLIC SERVICE COMMISSION

Case No. 680

In the Matter of the Petition of THE NEW YORK MUTUAL GAS COMPANY for Consent to the Transfer of the Works and System of Its Gas Plant to Consolidated Gas Company of New York (Which Joins in the Petition)

To the Public Service Commission of the State of New York:

Consolidated Gas Company of New York, and The New York Mutual Gas Light Company hereby severally accept and agree to comply in good faith with the provisions of the order of this commission in Case No. 680, dated August 17, 1922, whereby is given the consent of the Commission that The New York Mutual Gas Light Company, may transfer its works, distributing system and other specified property as of February 28, 1922, to Consolidated Gas Company of New York, as set forth in the petition herein, verified May 16, 1922, for the sum of $9,012,275.37, made up as follows:

Total selling price of the works, distributing system and other specified property of The New York Mutual Gas Light Company as shown in "Exhibit B" of the petition	$10,850,716 67
Total debts, including accrued taxes and other liabilities of The New York Mutual Gas Light Company assumed and to be paid by Consolidated Gas Company of New York as shown in "Exhibit B" aforesaid	1,838,441 30
Balance to be paid in cash	$9,012,275 37

and the said companies hereby severally accept the said order with all its terms and conditions.

In witness whereof, the said companies have caused the [fols. 3160 & 3161] acceptance to be executed by their re-

spective officers thereunto duly authorized, and their respective seals to be hereunto attached, this 23rd day of August, 1922.

Consolidated Gas Company of New York, by (Signed) Geo. B. Cortelyou, President. Attest: (Signed) H. M. Brundage, Secretary. (Seal.) The New York Mutual Gas Light Company, by (Signed) Geo. W. Parkhurst, Vice-President. Attest: (Signed) Geo. W. Parkhurst, Secretary. (Seal.)

[Verifications.]

[fo. 3162] PLAINTIFF'S EXHIBIT No. 201

STATE OF NEW YORK PUBLIC SERVICE COMMISSION

Case No. 680

In the Matter of the Application of THE NEW YORK Mutual Gas Light Company, under Section 70 of the Public Service Commission Law, for the Consent of the Commission to the Purchase by the Consolidated Gas Company of New York of the Works, Distributing System, and Certain Other Property of the New York Mutual Gas Light Company, and for the Consent of the Commission to the Transfer of the said Works, Distributing System and Other Property of the Petitioner to Consolidated Gas Company of New York.

To the Public Service Commission of the State of New York:

Pursuant to Paragraph 3 of the Order made by the Commission in the above-entitled proceeding on August 17, 1922, the following statement, duly verified, is hereby submitted for filing with the Commission:

(a) The exact date of the sale of the works, distributing system and other specified property of the New York Mutual Gas Light Company to, and the purchase of the said property by, the Consolidated Gas Company of New York, pursuant to the said Order of the Commission entered August 17, 1922, was August 31, 1922.

(b) The details of the changes in the accounts of The New York Mutual Gas Light Company, in so far as they record the changes in its property, assets and liabilities from February 28, 1922, to the actual date of the transfer of the property of that Company to the Consolidated Gas Company of New York, are as shown in the annexed schedules, marked "Exhibit A," pages 1 and 2.

[fol. 3163] (c) The detailed balance sheet of The New York Mutual Gas Light Company as of the date when the transfer of its property to the Consolidated Gas Company of New York was recorded in its accounts, is hereto annexed as "Exhibit B."

(d) The particulars of the entries made upon the books of the Consolidated Gas Company of New York, reflecting the acquisition of the property authorized by the said Order to be purchased, are hereto annexed as "Exhibit C," pages 1, 2 and 3.

(e) A detailed balance sheet of the Consolidated Gas Company of New York as of such date is hereto annexed as "Exhibit D."

Dated New York, October 28, 1922.

H. M. Brundage, Secretary of Consolidated Gas Company of New York. Geo. W. Parkhurst, Vice-President of The New York Mutual Gas Light Company, now dissolved.

[fol. 3164] State of New York,
County of New York, ss:

Personally appeared before me on this 28th day of October, 1922, Henry M. Brundage and George W. Parkhurst, to me known, who, being by me duly sworn, did depose and say that they were respectively the Secretary of the Consolidated Gas Company of New York, and the Vice-President of The New York Mutual Gas Light Company, now dissolved; that each had read the foregoing statement and knew the contents thereof, including the schedules thereto annexed, and that the same are true and correct to the best of the knowledge, information and belief of each of them.

F. C. Gordon, Notary Public, Queens County, No. 1450. Certificate filed in New York County No. 251. New York County Register's No. 3232. Commission expires March 30, 1923. (Seal.)

[fol. 3165]

EXHIBIT "A"

Page 1

The New York Mutual Gas Light Company

Statement of Changes in Assets and Liabilities During the Period from February 28, 1922, to August 31, 1922

The purchase price specified in Paragraph 1 of the Order of the Commission was	$9,012,275 37
From this, there were deducted, by agreement with the Engineers of the Commission, accepted by the respective parties to such purchase and sale, Fixed Capital items aggregating	32,282 91
	$8,979,992 46
The sum actually paid by the Consolidated Gas Company of New York to the New York Mutual Gas Light Company, pursuant to said Order of the Commission, was	$9,598,850 64
Showing a difference, due to changes in the assets and liabilities of the New York Mutual Gas Light Company between February 28, 1922 and August 31, 1922, of	$618,858 18

The details of such changes in assets and liabilities between such dates are shown as follows:

	August 31, 1922	February 28, 1922	Variation
		$10,029,844 15	
Less as agreed		32,282 91	
Total Fixed Capital	$10,010,630 72	9,997,561 24	$13,069 48

Statement of Changes in Assets and Liabilities—Continued

	August 31, 1922	February 28, 1922	Variation
Materials and Supplies	184,517 99	299,654 78	115,136 79*
Accounts Receivable	148,198 76	263,430 59	115,231 83*
Gas In Holders, etc.	32,368 33	63,471 25	31,102 92*
Fire Insurance Fund	153,474 68	149,574 68	3,900 00
Liability Insurance Fund	46,700 00	44,341 22	2,358 78
Municipal Light Co. Stock	400 00	400 00	
Total assets	$10,576,290 48	$10,818,433 76	$242,143 28*
Accounts Payable	$142,395 50	$249,923 17	$107,527 67*
Taxes Accrued	148,222 21	420,994 61	272,772 40*
Interest on Taxes Accrued	1,783 26	22,071 22	20,287 96*
Consumers' Deposits	150,038 87	145,393 96	4,644 91
Compensation on Liberty Bonds		58 34	58 34*
Consolidated Gas Co. "Loan"	535,000 00	500,000 00	35,000 00
Bills Payable		500,000 00	500,000 00*
Total liabilities	$977,439 84	$1,838,441 30	$861,001 46*
Total	$9,598,850 64	$8,979,992 46	$618,858 18

[*Red in copy.]

[fol. 3166]

EXHIBIT "A"

Page 2

The New York Mutual Gas Light Company

Detailed Statement of Changes in Fixed Capital

During the Period from Feb. 28, 1922, to Aug. 31, 1922

Fixed capital as of December 31, 1908:	Ledger balance Aug. 31, 1922	Ledger balance Feb. 28, 1922	Net increase
Real Estate	$882,550 00	$882,550 00	
Bulkheads	28,439 69	28,439 69	
Street Mains	344,137 59	347,653 14	$3,515 55*
Services	76,274 12	83,811 57	7,537 45*
Meters	16,238 42	32,309 96	16,071 54*
Cocks and Connections			
New Stable	6,904 04	6,904 04	
Blacksmith Shop	1,782 63	1,782 63	
Manufacturing Plant	976,355 68	976,875 68	520 00*
New Construction	383,708 83	383,708 83	
New Holder	405,884 05	405,884 05	
Total	$3,122,275 05	$3,149,919 59	$27,644 54*

[*Red in copy.]

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Detailed Statement of Changes in Fixed Capital—Continued

Fixed capital since December 31, 1908:	Ledger balance Aug. 31, 1922	Ledger balance Feb. 28, 1922	Net increase
Services	$52,571 80	$49,911 39	$2,660 41
Meters	179,486 50	168,720 61	10,765 89
Furniture and Fixtures	22,358 18	22,258 18	100 00
Cocks and Connections	37,637 89	37,238 05	399 84
Rental Appliances	284,106 61	291,847 96	7,741 35*
General Equipment	11,200 72	10,895 72	305 00
Tools	9,267 50	9,267 50	
Misc. Power Plant Equipment	133,628 35	133,628 35	
Water Gas Sets & Accessories	3,333 66	3,333 66	
Furnaces, Boilers and Accessories	70,359 63	68,221 31	2,138 32
Accessory Equipment at Works	46,236 16	43,655 22	2,580 94
Rental Lamps	2,769 53	3,764 21	994 68*
Real Estate Assessments on Improvements	14,574 91	14,574 91	
Other Tangible Gas Capital		395 73	395 73*
Purification Apparatus	185,873 13	182,882 03	2,991 10
Works and Station Structures	205,003 33	204,653 11	350 22
Steam Engines	1,041 54	1,041 54	
Engineering and Superintendence	16,288 00	13,682 63	2,605 37
Miscellaneous Construction Expenditures		296 32	296 32*
Gas Laboratory Equipment	252 30	247 50	4 80
Gas Appl. Storage Building, formerly Still House	32,011 85	22,415 23	9,596 62
Street Mains	36,368 23	29,724 64	15,643 59
Total	$1,344,369 82	$1,303,655 80	$40,714 02
Grand total	$4,466,644 87	$4,453,575 39	$13,069 48

[*Red in copy.]

[fol. 3167] EXHIBIT "B"

The New York Mutual Gas Light Company

Comparative General Balance Sheet as of August 31st, 1922

Assets

Current Assets:	
Cash	$1,649,017 97
Accounts Receivable from City of New York	7,405 57
Consumers Accounts Receivable	76,549 12
Current Accounts Receivable from Associated Companies	45,715 50
Other Accounts Receivable	17,588 69
U. S. Government (Light Oil Recovery Plant)	
Interest and Dividends Receivable	
Total Current Assets	1,796,276 85
Special Deposits	
Material and Supplies	184,517 99
Gross Floating Capital	1,980,794 84
Miscellaneous Investments:	
Stocks of Associated Companies	400 00
Other Investment Securities	148,274 68
Total Miscellaneous Investments	148,674 68
Fixed Capital:	
Total Fixed Capital December 31, 1908	3,122,275 05
Total Fixed Capital Installed since 1908	1,344,369 82
Total Book Cost	4,466,644 87
Accrued Amortization of Capital	
Cost, Less Depreciation	4,466,644 87
Unamortized Debt, Discount and Expense	1,137 97
Grand Total	$6,597,252 36

Liabilities

Unfunded Debt:	
Taxes Accrued	$148,222 21
Bills Payable	.....
Consumers Deposits	150,038 87
Accounts Payable to Associated Companies	564,062 16
Miscellaneous Accounts Payable	107,306 67
Interest Accrued on Unfunded Debt	1,783 26
Other Unfunded Debt	6,026 67
Total Unfunded Debt	977,439 84
Reserves:	
Contingency	1,342,499 76
Renewals and Replacements—Plant withdrawn from service	90,406 90
Casualties and Insurance Reserve	148,274 68
Total Reserves	1,581,181 34
Capital Stock:	
Common Stock	3,409,700 00
Total Stock	3,409,700 00
Corporate Surplus	602,031 18
Special Surplus Account	26,900 00
Grand Total	$6,597,252 36

[fol. 3168] EXHIBIT "C"

Page 1

Consolidated Gas Company of New York

Journal Entry #906, Entered in August, 1922, Account

Sundries	$10,010,630 72
To New York Mutual Gas Light Co.—Purchase of Gas Properties	$10,010,630 72

Crediting the latter account with the purchase price of the following assets which were purchased from the New

York Mutual Gas Light Company on August 31, 1922, pursuant to agreement authorized by the Executive Committee on May 16, 1922, approved by the Board of Trustees on May 25, 1922, and approved by the Public Service Commission, by Order dated August 17, 1922, Case No. 680:

Fixed Capital Since Dec. 31, 1908

Real Estate—East 11th St. Station	$1,763,535 67
Plant—East 11th St. Station	3,539,101 77
Street Mains	2,578,755 44
Services	455,401 00
Meters	350,039 34
Cocks and Connections	30,320 76
Gas Appliances Rented	237,676 20
Tools and Implements:	
East 11th St. Station	4,496 41
Hester Street Shop	8,180 50
Automobile and Accessories	9,533 00
General Stable Equipment	1,362 35
Furniture and Fixtures-Branch 2	22,258 28
Other Intangible Gas Capital:	
Organization and Development prior to Const.	530,356 00
Cost of Financing	479,614 00

* * * * * * *

NOTE.—The above amounts classified to real estate and plant are being distributed to the appropriate subdivisions of Fixed Capital provided in the Uniform System of Accounts, and upon the completion of this, a further statement will be filed with the Commission furnishing this information in detail.

[fol. 3169] EXHIBIT "C"

Page 2

Consolidated Gas Company of New York

Journal Entry #907, Entered in August, 1922, Accounts

Sundries		$565,659 76
To New York Mutual Gas Light Co.—Purchase of Gas Properties		$565,659 76

Crediting the latter account with the purchase price of the following assets which were purchased from the New York Mutual Gas Light Company on August 31, 1922, pursuant to agreement authorized by the Executive Committee on May 16, 1922, approved by the Board of Trustees on May 25, 1922, and approved by the Public Service Commission of New York by order dated August 17, 1922, Case No. 680:

Material & Supplies:

Gas Making Material—11th St.:		
Coal—E. 11th St. Station		$61,649 00
Coke—E. 11th St. Station		4,495 75
Gas Oil—E. 11th St. Station		10,010 26
Iron Mass—E. 11th St. Station		3,994 80
Shavings—E. 11th St. Station		452 67
Residuals on Hand: Water Gas Tar—E. 11th St. Sta.		8,420 78
Other Than Gas Making Appliances—Br. 1		19,797 10
" " —Br. 2		18,986 40
" " —Repair Shop		13,581 64
" " —Branch 2 (Lamps)		3,842 23
Material & Supplies—Stations: East 11th St. Station		22,328 73
Material & Supplies—Shops: Hester Street Shop		15,938 98
2nd Avenue Shop		1,019 65

Accounts Receivable:	
Sundry Consumers—Branch 2	76,549 12
—General Office	7,405 57
Sundry Debtors	110,944 07
General Suspense:	
Fire Insurance Trustees	5,200 00
Gas in Holders & Mains and furnished to consumers—not yet billed	32,368 33
Fire Insurance Part. Certificates	148,274 68
Securities, Stocks & Bonds: Municipal Lighting Co. Stock	400 00

[fol. 3170] EXHIBIT "C"

Page 3

Consolidated Gas Company of New York

Journal Entry #908, Entered in August, 1922, Accounts

New York Mutual Gas Light Co.—Purchase of Gas Properties	$977,439 84
To Sundries	$977,439 84

Charging the former account with that company's current liabilities, as of August 31st, 1922, the same having been assumed by this company, pursuant to the terms of a Bill of Sale, of that company's property, to this company, dated Aug. 31, 1922, authorized by the Executive Committee on May 16, 1922, approved by the Board of Trustees on May 25, 1922, and approved by the Public Service Commission by Order dated August 17, 1922, Case No. 680:

Sundry Creditors	$135,028 46
Accrued Taxes	148,222 21
Accrued Interest on Unpaid Taxes	1,783 26
Consumers Deposits—Branch 2	150,038 87
General Suspense—Law Expense	6,500 00
Accrued Water	867 04
New York Mutual Gas Light Co.—Loan #2	535,000 00

[fols. 3171 & 3771a] EXHIBIT "D"

Consolidated Gas Company of New York

Balance Sheet as of August 31st, 1922

Assets

Current Assets:	
Cash	$2,693,835 52
Bills Receivable—time	15,500 00
Accounts Receivable and Insurance Fund Investment	2,129,487 44
Accrued Interest Receivable	382,260 50
Total current assets	5,221,083 46
Deposits with Industrial Comm. State of N. Y. & Board of Est. & Appor.	273,033 75
Material and Supplies	1,809,741 24
Gross floating capital	2,082,774 99
Securities, Stocks and Bonds of other Companies, Bonds and Mortgages Owned and Fire Insurance Participation Certificates	104,047,341 80
Fixed Capital:	
Fixed Capital, December 31, 1908	38,821,198 82
Fixed Capital installed since 1908	26,716,656 15
Total Fixed Capital	65,537,854 97
Miscellaneous Temporary Debits:	
Temporary advances to associated companies	30,810,000 00
Unamortized debt, discount and expense	290,247 69
Total unadjusted debits	31,100,247 69
Grand total	$207,989,302 91

Liabilities

Unfunded Debt:	
Taxes Accrued	$2,423,154 22
Bills Payable	8,700,000 00
Consumers Deposits	1,773,804 72
Accounts Payable	3,481,609 89
Int. Acc. on Unpaid Taxes	383,966 16
N. Y. Mutual Gas Light Co.—Purchase of Gas Properties	1,598,850 64
Convertible Debentures, 1 Yr. Sec. 7% Gold Notes & Liabil. I. Tr.	20,270,500 00
Total unfunded debt	38,631,885 63
Funded Debt:	
Five Year Secured 7% Conv. Gold Bonds	1,660,100 00
Reserves:	
Capital Stock Premiums	13,918,878 23
Contingency	11,801,659 48
Insurance Fund Gen'l & Fire Ins. Part. Reserve	940,321 64
Renewals & Replacements—Plant withdrawn from service	782,388 25
Total reserves	27,443,247 60
Capital Stock Common	123,339,900 00
General Profit and Loss	16,914,169 68
Grand total	$207,989,302 91

[fol. 3172] Statement re Plaintiff's Exhibit No. 208

Order made by the Public Service Commission, August 30, 1922, in Case No. 108, prescribing a 537 minimum average B. t. u. standard for gas in New York City and suburban territory.

(Note.—This is printed as Exhibit "C" annexed to the complaint in this action, for which see pleadings herein.)

[fol. 3173] STATEMENT RE PLAINTIFF'S EXHIBIT NO. 209

Order made by Public Service Commission, August 30, 1922, in Case No. 79, In the Matter of gas rates in the City of New York and suburban territory, Case No. 79-G, Matter of rates for gas of the Consolidated Gas Company of New York and allied company cases, prescribing as the just and reasonable rates to be charged by the Consolidated Gas Company et al., to general consumers, $1.15 per thousand cubic feet of gas, with graduated reductions according to quantity consumption.

(This is printed as Exhibit "B" annexed to the complaint in this action, for which see pleadings herein.)

[fol. 3174] STATEMENT RE PLAINTIFF'S EXHIBIT NO. 210

Opinion adopted by the Public Service Commission August 30, 1922, in Case No. 79, Matter of gas rates in the City of New York and suburban territory, and allied company cases, and in Case No. 108, Matter of standards, etc.

(NOTE.—This is printed as Exhibit A annexed to the complaint in this action, for which see pleadings herein.)

[fol. 3175] PLAINTIFF'S EXHIBIT No. 211

STATE OF NEW YORK PUBLIC SERVICE COMMISSION, ALBANY, N. Y.

Report in the Matter of Gas Rates in the City of New York and Suburban Territory

[Case No. 79]

August 30, 1922

[fol. 3176] STATE OF NEW YORK PUBLIC SERVICE COMMISSION, ALBANY, N. Y.

Report in the Matter of Gas Rates in the City of New York and Suburban Territory

[Case No. 79]

August 30, 1922

[fol. 3177] STATE OF NEW YORK PUBLIC SERVICE COMMISSION

[Case No. 79]

In the Matter of Gas Rates in the City of New York and Suburban Territory

New York, August 30, 1922.

This investigation was initiated by the Commission by order dated May 20, 1921. Although broad in its title, the inquiry has "particular reference to the question of block rates," as stated by the Chairman (p. 111).[1]

A hearing was had on June 16, 1921, when appearances were entered by the various parties interested, certain cost and other data filed by the companies concerned in compliance with the Commission's order, and a petition presented for the abolition of the flat rate, "and the substitution of graduated rates plus an equitable service charge." (p. 52).

[1] Page references herein, except as indicated, are to the "Record" in case No. 79; references to "Report" are to the Report of Joint Committee on the subject of Rates for Industrial Consumers.

Further hearings were held on April 24th, and on the 2d, 4th, 9th, 17th, 24th and 26th of May, 1922, when the case was declared closed (p. 710).

Joint Conference Committee

In the endeavor to reconcile differences expected to arise between industrial consumers and the gas companies during hearings in which the former had intervened to further their long continued efforts to secure the adoption of a graduated schedule, and with the approval of the Commission, the Chairman suggested a conference between representatives of the large consumers and the companies. Accordingly, and on September 20, 1921, a conference was publicly convened. It was attended by representatives of the Merchants Association of New York, industrial users of gas and gas companies, and a Joint Committee was then created and appointed (p. 645).

Thereafter, and on December 22, 1921, the Joint Committee transmitted its report to the Commission, consideration having been given, as stated in the report, to "the several suggestions made as to the rates to be charged to consumers using gas in large quantities, principally in manufacturing industries." (Report, p. 1).[1]

It was also expressly stated in the report that the Committee "sought to formulate only equivalents of the rates now in force, to the end that without either increasing or reducing the net revenues of the companies, the Commis- [fol. 3178] sion may consent to the filing and putting in effect of a 'block schedule,' without prejudice to Commission action at any time upon determination that such rates are too high or too low." (Report, pp. 17, 18).

The Committee's report was accompanied by tentative block rate schedules, Schedule 1 being "prepared and submitted by the gas companies' representatives," Schedule 2 "by John M. P. Thatcher, of Counsel for Manufacturers' Committee," and Schedule 3 "by F. B. de Berard for the Merchants' Association of New York." The several schedules were stated to be contingent upon the prior fixation of a 550 B. T. U. average monthly standard, which would

[1] Page references herein, except as indicated, are to the "Record" in case No. 79; references to "Report" are to the Report of Joint Committee on the subject of Rates for Industrial Consumers.

permit a net saving of about five cents per thousand cubic feet of gas sold (Report, p. 4). It was reported that in the conference there arose a "divergence of view," the gas companies' representatives contending that the change of standard and inauguration of block rates for the benefit of industrial consumers should be accompanied by a reduction in the rate to be paid by small users of gas, the representatives of the industrial consumers maintaining the contrary (Id., p. 6).

Witnesses

The witnesses examined were as follows:

Mr. Alfred E. Forstall, called as a witness by the Commission, a consulting engineer on public utility matters, who graduated from Lehigh University in 1883 with the degree of Mechanical Engineer and who had been employed by various gas companies from 1885 until 1899, both in the manufacturing and distribution departments and as general manager in charge of all operations of the company by which he was last so employed (p. 205). Mr. Forstall testified that in the course of his practice as consulting engineer he had made a great many examinations of gas properties for prospective purchasers or for prospective purchasers of bonds, and had advised gas companies as to the development of their properties. His attention to the subject of rate structure began in 1981 and as a result of his studies he had occasion to read papers before the American Gas Association in 1898 and in 1905, also advising several gas companies as to the proper structure of rates and the proper rates for them to charge (p. 206).

In the work of advising as to rate structure there has been necessary investigation on the part of Mr. Forstall of operating costs and classification thereof, and determination by him of values of different portions of the properties.

Mr. R. A. Carter, Vice-president, Consolidated Gas Company, who had entered the gas business in New York city in 1887 as an office boy in the employ of the New York Gas Light Company and had served in various capacities, becoming general bookkeeper in the early nineties, and successively, Comptroller, Secretary, and Vice-president, having personal supervision and direction of the accounting and commercial departments, the commercial department

including also the utilization department and the financial [fol. 3179] affairs of the Consolidated Gas Company and its affiliated gas and electric companies (pp. 372-377) testified that he had done practically all the different phases of work which pertain to the gas business in the commercial department, having had charge of complaints from consumers for many years (p. 380) and having had under his jurisdiction and supervision for a great many years the rate schedules of the Consolidated Gas Company and the policy of the company with respect to rates. He had been required to be entirely familiar, through statistical information which regularly came to him, with the relationship between the cost of gas and the price charged therefor. He had conferred from time to time with representatives of large consumers and had studied the question of differential rates (p. 381). Mr. Carter is Chairman of the Committee of Rate Fundamentals of the American Gas Association (p. 382).

Mr. George E. Woods, Chief Engineer, Consolidated Gas Company, who has been thirty years in the gas business in New York city, having become Assistant Engineer of the Standard Gas Light Company in 1892, Chief Engineer in 1895, and General Manager 1898 to 1901, when he became Engineer of Manufacture of Consolidated Gas Company, in 1911 becoming Assistant Chief Engineer of the Consolidated and the Astoria Light, Heat and Power Companies. In these various capacities Mr. Wood had charge both of manufacture and distribution, had relations with the keeping of accounts and cost data of different companies, and had to do with the construction and operation of plants and the installation of various types of apparatus. As Engineer of Manufacture and as Chief Engineer, Mr. Woods had continuously under his observation the work in different plants, the cost of labor and material, the units of labor and material used and the rates of pay. He had made studies of the experience of other cities and other companies (pp. 452-454). Mr. Woods' testimony in case No. 108, being pages 390 to 406 and 1585 to 1626, was physically incorporated into the record of this case, commencing on page 452 and extending through page 511. He appeared and testified, however, in this case also.

Mr. A. S. B. Little, an engineer in the employ of the City of New York, was not called as a witness, but his testimony in the case of the Bronx Gas and Electric Company, No. 79-B, was incorporated into the record of this inquiry.

Exhibits

The documentary evidence included the following:

Report of Joint Committee as to "Block" Rates for Large Consumption of Gas for Industrial Uses—Report of Sub-Committee Approved and Adopted, on December 21, 1921, by the Joint Committee Created by the Conference Convened, on September 20, 1921, by the New York State Public Service Commission at the Instance of the Merchants' Association of New York and a Large Committee [fol. 3180] Representing the Industrial Consumers of Gas—Transmitted to the Public Service Commission on December 22, 1921 (Exhibit No. 33 for Identification; marked also Exhibit No. 41, Record, p. 398).

Tentative Schedules Transmitted to the Public Service Commission With the Report of the Joint Conference Committee, Dated December 21, 1921, as to "Block" Rates for Large Consumption of Gas for Industial Uses (Exhibit No. 34 for Identification; marked also Exhibit No. 40; Record, p. 397).

Memorandum as to Block Rates for Gas, Prepared for Public Service Commission of New York, by Alfred E. Forstall (Exhibit No. 35).

Statement of "Gas Consumers Classified According to Gas Consumption" (Exhibit No. 42, Copied in Record, pp. 519-520).

Suggestion of a Block Rate Suitable for the New York and Queens Gas Company (Exhibit No. 43; Record, p. 541).

Statement of Estimated Savings, by Various Thermal Unit Standards (p. 468).

Scope of Inquiry

It is to be remarked that none of the witnesses called advocated the retention of the uniform rate. Manifestly, however, the questions are two-fold, (1) whether the uniform

rate should be abandoned and a graduated schedule substituted, and (2) if so, how a graduated schedule should be constructed.

(1) The Uniform Rate:

In the opinion of Mr. Carter, the uniform rate is inequitable and discriminatory, for the reasons set forth in the report of the Joint Committee (p. 387). Agreement was there reported "that in this metropolitan area a 'flat' rate for gas is discriminatory and inequitable, in that it places upon the larger users of gas an utterly disproportionate quota of various elements of expense not {chargeable to / incurred because of} such larger users in any such ratio or proportion at all. The 'flat' rate puts upon the industries using gas in wholesale quantities the burden of paying the distribution expense or 'consumer costs' of great number of non-users and virtual non-users of gas, who are thereby permitted to escape 'paying their own way' at all." (Report, pp. 4, 5).

Mr. Carter testified that there are no less than 250,000 meters in New York city which show no consumption at all in some months of each year, and in his opinion it is unjust to continue a rate which permits non-users to pay nothing when the companies stand ready to serve their demands (p. 388).

(2) Block Rates:

They are "pactically all of the same general character. They do not differ substantially," said Mr. Carter (p. 628), and further, those that have been called to his attention "generally bear evidence of being established purely arbitrarily." (p. 629).

[fol. 3181] Nevertheless, in Mr. Carter's opinion, the early introduction in New York city, of reasonably graduated rates for gas service is desirable (p. 387).

(3) Rate Structure:

The point of difference is with respect to the method of constructing a graduated schedule. It is true that there are divergent theories, but the difficulty is in the applica-

tion of such theories as are the subject of general agreement. It seems that every case depends upon its own particular circumstances.

Property valuation and the determination of the reasonable return to which the operating companies are entitled did not enter into this investigation. Therefore, as there was no basis laid for the practical application of principles, they could be developed only in generality. However, they serve as a guide to more detailed inquiry as to their applicability in particular valuation and rate making proceedings.

At the outset it is to be observed that what may be called the science of rate structure seems to involve the allocation of various costs incurred in manufacture and distribution among the consumers classified as to quantity consumption; and, as a practical matter, it seems that such classification serves also to indicate the general purposes for which gas is used. However, economic considerations can never be quite evaded. It is to be learned from Mr. Forstall's testimony that only in relation to the supply of natural gas do rates increase with consumption and that for the purpose of conserving the gas. But the purposes for which gas is used are to be accorded due importance though not discussed here as beyond the field of the inquiry. The propriety of classifying according to quantity consumption is the most convenient and the most generally employed method.

It was particularly with the details of cost allocation that the witnesses testified, and the Commission has the benefit of a highly interesting and instructive study as developed in the memorandum (Exhibit No. 35), prepared by and in the testimony of Mr. Forstall. The testimony of Mr. Carter and of Mr. Woods was directed principally to the considerations advanced by Mr. Forstall.

Mr. Forstall's Views

Mr. Alfred E. Forstall testified in words or in substance as follows:

Historical:

The first charges for gas were based on a flat rate per lamp, and the lamps were supposed to be burned a certain

number of hours. But the consumers did not observe the hours and the practice proved unsatisfactory. Gas meters were invented and a flat rate per thousand cubic feet was charged, that rate being equitable at the time because all consumers used gas for lighting and there was no competition from electricty (pp. 208, 209). Accordingly, every [fol. 3182] consumer used a fair amount of gas during the year, and sufficient to pay his own way, although even then the large consumers probably paid a larger return upon the properties rendering the service.

After electricity became available for lighting purposes, preference was given to it by some consumers who, however, retained the gas equipment for use in emergencies, thereby causing expense to the gas companies which was not reimbursed through the use of gas in small quantities (p. 209). This loss had to be met by other customers.

About 1890, gas began to be used for domestic cooking and water heating, and later it became available for use in hotel and restaurant cooking and in a number of industrial pursuits having different load factors and different periods of maximum demand. This change destroyed the equity of the flat rate (p. 211), in that different classes of consumers paid different rates of return upon the investment used in supplying the gas.

Demand Factor:

The business of a gas company is not only the sale of gas as a commodity, but "also the sale of service in connection with the use of gas." The company "must maintain at all times at the burners of all its consumers a supply of gas ready for use at certain times and in such quantities as each consumer may desire." Thus a large investment is at the demand of the customer, who has an unrestricted option in availing himself of the service (p. 212). The business of a public utility is "one of slow turnover," and a gas company must maintain an investment of four to five times the amount of its annual income, the carrying charges of which investment form a large part of the cost of gas as a commodity (pp. 212, 213).

The amount of the investment in manufacturing plants and holders being fixed by the maximum twenty-four hours'

demand, and the amount of investment in the distribution system being that required by the maximum hourly rate of demand, the carrying charges per unit of gas sold "vary greatly for different classes of business in accordance with their load factors." (p. 213).

For purposes of illustration Mr. Forstall undertook to use certain figures which were set forth in the decision of the court in the case of the Consolidated Gas Company, and although he stated that the figures were used merely for purposes of illustration, strenuous objection was offered by counsel for the gas companies, and by the Assistant Corporation Counsel, who desired that the matter be set forth by means of a formula, though the witness stated that any formula would be so involved as to make illustration impossible (pp. 213, 214).

Assuming an investment of $75,000,000 and a maximum daily output of 85,000,000 cubic feet, the rate base per [fol. 3183] thousand cubic feet of maximum day's output is $876 (Record, pp. 226, 227; Exhibit No. 35, pp. 5, 6). At the rate of 8 per cent the requisite return amounts to $70 per year per thousand cubic feet of maximum day's output. House heating and average industrial use are the two classes to be compared. The former has annual sales of seventy times the maximum day; the latter three hundred times such maximum. Accordingly, the cost per thousand cubic feet "of gas sold of return on fair value" is $1 for house heating and $.23 for industrial uses, "a clear advantage to the latter of $.77 per thousand cubic feet of gas of this part of the total cost." (p. 227).

This shows the great effect upon the cost to the gas company of the load factor of the consumer, that is, the relation between his maximum demand and his annual consumption (Record, p. 227; Exhibit No. 35, p. 6). The gas company must supply not only the maximum day's but the maximum hourly demand, irrespective of the extent to which the gas is used. Thus "investment carrying costs are entirely independent of the amount of gas used per month or per year" (Record, p. 228; Exhibit No. 35, p. 6), and, parenthetically independent of such use also are the costs of keeping customers' accounts and of maintaining the service, meter and other equipment provided for the customers' individual use.

Investment and maintenance carrying costs contain items "depending entirely upon the excess of maximum demand over average demand commonly called demand costs," and items incident to "the mere attachment of the customer to the system, even if no gas at all is used, commonly called customers' costs." (Id.).

Allocation of Costs:

In any discussion of rate structure the terms "demand costs" and "customers' costs," would be used in designating the different classes into which the cost should be divided (p. 229).

"The allocation of the total costs of a gas company, including return upon the fair value of the property used and useful, must be made between the three classes of costs, demand costs, customers' costs and commodity cost." (pp. 230, 231).

Demand Costs:

"The demand costs are those involved by the extra investment in plant required to supply the maximum demand over and above the investment that would provide all the plant called for by the average demand." (Exhibit No. 35, p. 7). Labor costs are comparatively negligible. The maximum demand charge, therefore, was said to be made up of the return and retirement fund charges, and the extra costs of maintenance, upon such parts of the investment as relate to manfacturing plant, street mains, service pipes and meters and are required to take care of the maximum demand over the average (Record pp. 231, 232; Exhibit No. 35, pp. 7, 8).

[fol. 3184] Customers' Costs:

These are said to include the following (Exhibit No. 35, p. 9):

Distribution superintendence and expenses;
Consumers' premises work;
Removing and resetting meters;
Maintenance of services for average demands;
Maintenance of gas appliances;

Maintenance of consumers' meters for average demands;
Commercial expenses;
Return and retirement fund charges on the cost of a service of the size required to furnish gas at the average rate; and
Return and retirement fund charges on the cost of a meter required to furnish gas at the average rate.

Commodity Costs:

"The commodity costs cover all the operating expenses not specifically assigned either to the demand or customers' costs, together with the return and retirement fund charges for the portion of the plant and street mains required for the average demand not taken care of under the demand costs." (P. 233.)

Percentage Allocation:

On the basis which the witness assumed and which it will be unnecessary to detail here, he found that "the percentage of the total investment chargeable to each class of cost is." (Exhibit No. 35, p. 11; Record, p. 234):

Commodity	48 9 per cent
Demand	35 6 per cent
Customer	15 5 per cent
	100 0 per cent

Production costs would fall largely in the class of commodity costs, but renewals and storage the witness assumed to fall under demand costs (Exhibit No. 35, p. 12).

Distribution costs may be apportioned $^3/_4$ to the customer class and $^1/_4$ to commodity (Id.).

Mr. Forstall further stated that in the instance of his illustration operating costs added to investment carrying cost would reflect the percentage to be charged to each class, as follows (Id., p. 13):

Commodity	63 6 per cent
Demand	17 1 per cent
Customer	19 3 per cent
	100 0 per cent

"So that the costs which are independent of the amount of gas consumed and can not be equitably collected by a one-part flat rate per thousand cubic feet of gas used are, therefore, approximately 36.4 per cent of the total cost in this particular instance." He added that for different companies and bases of valuation different percentages would probably be found (Record, p. 249; Exhibit No. 35, p. 13).

[fol. 3185] Three-part Rate:

Upon the subject of proper rate structure Mr. Forstall testified:

"Since there are three distinct classes of costs, two of which are independent of the amount of gas used by any customer (but are dependent, one upon the load factor of the customer or of all of the customers combined, and the other upon the cost of caring for each customer individually) while only the third is dependent upon the amount of gas consumed by a customer, the logical method of charging would be by means of a three-part rate in which the proper weight was given to each class of costs." (Record, pp. 249, 250; Exhibit No. 35, pp. 13, 14.)

Two-part Rates:

"Optional three-part rates have been used by a number of companies, but in the making of obligatory rates, even where the fixed charges have been recognized, it has been customary to use a two-part rate, embodying a fixed charge for readiness to serve, usually called a service charge, of a certain amount per month, or per year, with monthly payments, and a charge per hundred cubic feet or per thousand cubic feet of the gas used." (Record, p. 250; Exhibit No. 35, p. 14).

Service Charge:

"Such a two-part rate has been put into effect in a large number of towns during the last few years. In many instances, a very active opposition to the service charge has developed, and for some reason or other the customers have apparently failed to understand, at any rate to acknowledge, that the service charge represented an actual cost to

the company, but have seemed to regard it as being a bonus collected by the company in addition to the actual cost of service which was paid for by the money collected for gas." (Record, pp. 250, 251; Exhibit No. 35, p. 14.)

It seems that the Wisconsin Railroad Commission, notwithstanding its analyses of the division of costs into the three classes, when actually fixing rates used only the fixed costs and the commodity costs to determine the cost per thousand cubic feet of gas supplied and worked out a system of block rates "which, on the average, would bring in very closely the cost of the gas and fixed charges in each block." (Record, p. 251; Exhibit No. 35, p. 14.)

But Mr. Forstall pointed out that the effect of the schedule was to relieve the consumer of small amounts of gas from paying the cost of the full service rendered to him, adding, however, that "the inequity is not as great as that involved by a flat rate per thousand cubic feet of gas for all amounts." (Record, p. 252; Exhibit No. 35, p. 15.)

Minimum Bill:

A minimum charge of fifty cents to a dollar per month has been incorporated in many rate schedules "this amount [fol. 3186] covering an equivalent amount of gas at the regular price, if used." (Record, p. 252; Exhibit No. 35, p. 15.)

The minimum bill operates to save some of the loss which would otherwise be incurred through customers who use little if any gas, but including as it does a certain amount of gas, such minimum charge does not cover any substantial portion of fixed charges, "Except for the customers who do not use any gas at all." (Record, p. 253; Exhibit No. 35, p. 15.)

According to Mr. Forstall, "a better way of securing the effect of a three-part rate, without the direct appearance of either separate demand and customer charges, or a single service charge, combining both the demand and the customer charges, is by means of block rates with the first block very small, say 100 cubic feet" (Record, p. 253; Exhibit No. 35, p. 16). "This method of charging with an initial block of 100 cubic feet per month has been substituted recently in several cases where a service charge had

been in force and aroused strong opposition." (Record, p. 254; Exhibit No. 35, p. 17.)

"From the experience of the companies where a rate schedule of this character has been put in force, it would seem as if this were a form of schedule that would establish substantial equity between the amounts paid for service by various classes of consumers, provided the charge for the first 100 cubic feet per month is properly fixed, without arousing any great indignation on the part of the public." (Record, p. 255; Exhibit No. 35, p. 17.)

But Mr. Forstall testified that it has seldom been thought advisable to make this charge for the first 100 cubic feet sufficiently high to cover all the fixed charges "because of the comparatively high price that this involves for the first 1000 cubic feet of gas." (Record, p. 255; Exhibit No. 35, p. 17.)

But even so, such a rate "is more equitable than a schedule consisting of a uniform flat rate, or even a schedule of block rates in which the first block covers even as small an amount as 1000 cubic feet per month. It is very much more equitable than block rate schedules in which the first block covers 20,000 cubic feet or even 50,000 cubic feet per month." (Record, pp. 256, 257; Exhibit No. 35, p. 19.)

Industrial Consumers:

In further development of the subject Mr. Forstall testified in substance as follows:

The requirement imposed upon a gas company in furnishing large industrial consumers involves an extra amount of property over and above that required to supply the small consumers (p. 264).

The Company must provide the manufacturing capacity necessary for the maximum demand of the industrial customer, and this is not met by the excess capacity which a company must have in order to insure continuous service. An additional load necessitates additional plant in order [fol. 3187] to maintain the proper reserve (p. 265). This is taken care of by putting the investment carrying cost for the manufacturing plant partly in the commodity costs and partly in the demand costs (p. 266).

The increased percentage of reserve capacity by reason of an additional industrial consumer must be determined in the light of the particular instance, but "no gas company would be safe without at least 10 per cent of excess manufacturing capacity and it might run easily up to 25 per cent" (pp. 226, 267). Mr. Woods testified that the Consolidated has excess capacity of 17 per cent and that the peak of one year over another has been as high as 28 per cent (p. 594).

The demand by industrial consumers is fairly uniform and such a demand often occurs at the same time as the maximum demand of the ordinary consumer (p. 268).

In the case of an industrial user who takes large quantities of gas at off-peak hours, it would be necessary to make a special classification and make the demand costs according to any such situation. "But it is a pretty difficult thing to go into all those niceties of classification. You have got to have a pretty dead open and shut case to warrant the establishment of a special class of customers." (pp. 285, 286).

"To be strictly equitable the rate should be lower where the demand comes off peak." (p. 286). But whether an industrial user takes his gas on peak or off peak, the investment should be apportioned (p. 287).

Mr. Forstall had not analyzed the New York situation to determined whether the industrial loads come on or off peak (p. 290). This, however, does not affect the consumer costs which are "intrinsically larger for the large customers than they are for the small customers." (p. 290).

To depart for a moment from Mr. Forstall's development of the subject, Mr. Carter testified that the volume of hotel and industrial business was built up on the 80 cent rate (p. 442), and that the loss of their business would not be material to the rates for other users (p. 443). But the industrial business has been developed at large expense and it is desired to retain it (p. 445).

Prepayment Meters:

With a due allotment of cost to prepayment customers, they would pay a slightly higher rate per unit. They contribute one of the difficult problems, because until they pay

for the gas it is not known how much they will consume. In cases of a service charge, or a block schedule where the first block is a small quantity, the meters are set for a price which will permit of a rebate by the collector (pp. 346, 347).

Rate Structure:

"If you want to go into all the niceties of the rate structure, you have to determine whether each particular customer comes on your peak and charge him a certain rate [fol. 3188] for his maximum demand based upon the fact. If you are going to take it just on a general basis, why you simply take the combined demands of all the customers at the time of your peak and work from that." (p. 272).

"An ideal rate schedule would be one that apportions to each class of customer the exact costs which the gas company had to meet in supplying him with the service and with the amount of gas that he used, and the nearer a schedule of rates can be made to approximate about that condition, the more nearly it is entirely and strictly equitable. Now, whether you can ever get such a schedule of rates I do not know, but we can come much closer to it than we can by charging a flat rate per thousand cubic feet of gas which recognizes no differences at all in the characteristics of the customers." (p. 281).

Each case must be determined according to an analysis of the particular conditions, and by making an allocation to the various classes of cost. It should first be determined what would be the strictly equitable charge for each block of customers of the same class, fixing a certain charge for each 100 cubic feet and which would not vary with the amount used within that specific block (p. 282). "Very few of the gas companies have thought that they could do that because it makes the charge for the first 100 cubic feet of gas fairly high. It would be at least a dollar and probably in a great many cases a dollar and a half or two dollars, even in the cases of some other companies. So they have to give and take, or the regulatory bodies have made them give and take." To be strictly equitable, the witness did not think they should do this, but it has been argued that public policy is above strict equity (pp. 283, 284).

Most companies "have erred on the side of being too good to the consumer of small amounts," who, however, "is not necessarily a poor man. He is usually a man who lives in a large apartment house, at least in the town with which I am familiar, a man who lives in a large apartment and goes away most of the year." (p. 284).

Mr. Forstall was very certain that in New York the Company discriminates against the large consumer in favor of the small (pp. 284, 285).

"To make a very nice rate you would have to apportion the investment between the three classes of costs and also with respect to the classes of consumers, but as I said, I think the gas company can as a rule afford to give the smaller consumers the benefit of the diversity factor. * * * That is usually the way it has been done" (p. 291).

"Any schedule of rates that you could possibly devise may be very inequitable to some particular consumer." (p. 292).

Demand Factor

Mr. Carter and Mr. Woods did not agree with Mr. Forstall as to recognition of the demand factor, at least to the extent that it concerns gas rates in the city of New York [fol. 3189] (p. 395). But they do not attack the theory of the three-part rate, with its allocation to demand costs. Their position is that the demand factor is not subject to determination, is impracticable, and, moreover, would tend to increase the rates to the small consumers.

Mr. Carter testified that the three-part rate has been extensively advocated and debated, but not used in any large city (p. 407). It is good theoretically, but it is practically impossible to apply a three-part rate (p. 548).

The demand charge is based upon the use of the property by any particular customer, as stated by Mr. Woods (p. 586). The average demand may or may not be 60 per cent of the total demand, as estimated by Mr. Forstall; but assuming that basis, if the load is seasonable it is down for everybody in the summer and up in the winter, and every customer's demand varies in the same way. Accordingly, "unless you know the demand of each particular customer, you can not scientifically make a demand charge." (p.

586). A demand charge can not be introduced by basing it on the average demand of all the customers (p. 587).

After pointing out that the average consumer in New York city, who uses about 3,000 cubic feet per month, is not a very small consumer (p. 401), Mr. Carter testified that the demand charge would not increase the rate above $1.25 per thousand for the average consumer, but would increase the cost to the small consumer (pp. 405, 406).

He said: "I think it would be impossible to construct a rate in which the demand was considered as a factor and which was scientifically and logically constructed that would not so considerably increase the rate to smaller consumers as to be prohibitive." (p. 541).

Mr. Carter further testified that 223,000 consumers, or 46.74 per cent of the total of the Consolidated Gas Company, use 2,000 cubic feet per month, and if the demand factor were recognized they would pay $1.50 per thousand per month; that 157,000 or thirty-three per cent use 1,500 cubic feet and would pay $1.70 per thousand (p. 547); that 94,000 or 20 per cent use 1,000 cubic feet or less per month and would pay $2 per thousand (p. 548).

There is no known basis for establishing a demand charge; and a rate can not be based on average conditions (p. 406).

The extent to which gas is used "in one hour or another of the twenty-four is not material." (p. 410). The manufacturing capacity supplemented by the holder capacity, enables operation at substantially a uniform hourly productivity (p. 411). The reserve manufacturing capacity over the maximum is 17 per cent (p. 412) which is conservative (p. 413).

In the absence of knowledge of the demand factor, how good a customer is can not be determined. Quantity measurement does not indicate it; so "there are many inconsistencies and many perhaps injustices in the best rate that could be devised" (p. 434).

[fol. 3190] Service Charge

Mr. Forstall's views upon this have been set forth.

According to Mr. Carter (p. 638) "the most exact and scientific method of apportionment would be by means of a service charge;" but he said further "while I am discuss-

ing it, I do not want it to be understood for a moment that I am advocating it." (p. 641).

Mr. Woods testified that a service charge is not popular (p. 590) and that a service charge and a flat rate would be sound and logical (p. 589). The service charge is used in many communities throughout New York and other States, but it is adopted more frequently in small communities (p. 592).

Minimum Bill

With reference to what is known as the minimum charge, Mr. Carter said:

"I think that would be the best form of rate structure that could be adopted for New York City." (pp. 642, 643).

"The collecting of a minimum bill * * * produces a certain amount of revenue which otherwise would not be collected and enables the establishment of a block schedule which absorbs the amount so collected and leaves the average amount collected the same as before." (p. 643).

Mr. Woods testified that the only other thing to do in order to give the large consumer a small rate is to institute a minimum bill (p. 591), that people seem to be better satisfied with the minimum bill: they get something for it; but it is not as good as a service charge (p. 591). The minimum bill is being used quite largely (p. 592).

Rate Schedules

New York and Queens Gas Company:

For the purpose of serving to indicate his views in practical manner, Mr. Carter produced a suggested block rate schedule for this company, and it was admitted in evidence (pp. 522, 541). It is as follows:

Suggestion of a Block Rate Suitable for the New York and Queens Gas Company

Based upon Present Costs of Materials and Labor, the Adoption of a Monthly Average 550 B. T. U. Standard, and the Allowance of an 8% Return upon the Company's Actual Investment as Found in the District Court, Plus Net Ad-

ditions and Including also in the Sum upon which a return is computed the Cumulative Deficiency in the Earnings of the Company during 1918, 1919, 1920 and 1921.

Present Rate

Service Charge 75¢ per Meter per Month $1.25 per M cu. ft.

Suggested New Rate

Average Rate Required, $1.525.
Revenue Required per Month, $53,792.55.

First	300 cu. ft. or less		$.75
Next	29,700 " "	per M	1.40
"	70,000 " "	" "	1.35
"	100,000 " "	" "	1.30
"	300,000 " "	" "	1.25
"	500,000 " "	" "	1.20
All over 1,000,000 cu. ft. per M			1.15
Prepayment Meters			1.70

[fol. 3191] Present Rate

Revenue $51,650.00.
Average rate per M cu. ft. $1.4642.

Suggested New Rate

Estimated Revenue per Month, $53,637 75.
Average Rate per M cu. ft. $1.5206.
Including Prepayment, Meters in Blocks, Average Rate per M cut. ft., $1.4960.

With respect to this schedule, Mr. Carter testified that it is practical, that it is based on proofs submitted by the company to the Commission and on the assumption that the revenue to which the company is entitled is an average of $1.52½ per thousand cubic feet of gas sold (pp. 522, 523). This Company is a separate unit (p. 536). The figures adopted were those which produce the necessary result in the way of revenue and which were designed also to give large consumers the benefit to which it was believed they are entitled. The reason 300 feet was adopted as the

minimum was because with other elements it produced the desired result. It enabled the establishment of the other steps which seemed to be fair and reasonable (p. 570). The minimum charge of $0.75 a month is not a service charge; it pays for the first three hundred feet of gas used (p. 573). It "is undoubtedly a perfectly fair and just and reasonable charge. That it is the best kind of a rate for Queens or for any other section, I have grave doubts," (p. 530).

Bronx Gas and Electric Company:

As indicated above, the testimony of Mr. Little in the Bronx Gas and Electric Company case, No. 79-B, was incorporated into the record, in which case he testified with respect to the block rate in that case that the first step was for the first 400 feet used, for which the rate was previously $0.40 and later $0.60. He recommended the continuance of the first step of 400 feet (p. 680) and also recommended the second step for the 9,600 feet above the first 400 and up to 10,000 (p. 681). A previous intermediate step had been cut out of the schedule (p. 682).

If there was no consumption at all, the consumer was bound to pay the $0.60 (p. 686).

The witness believed that was a proper form of rate (p. 686).

Schedule No. 1:

This is the schedule "prepared and submitted by the gas companies' representatives" and which accompanied the Report of the Joint Committee. With respect to it Mr. Carter testified that he gave to the large consumer an advantage that takes into account the fact that certain expenses which may be classified as consumers' expenses are not affected by the volume of consumption materially (p. 542), and in his opinion, to go beyond the point that the schedules have gone would be to introduce an element difficult of determination (p. 543).

The facts set forth in Schedule 1 are true and correct (p. 390), as are also the quantity consumption and number of consumers in Schedule 2 and 3 (p. 391).

[fol. 3192] If Schedule 1 were approved by the Commission, the Consolidated Gas Company and affiliated corporations would be willing to put it into effect (p. 394).

Costs

In this connection, and for such calculations as it may be desired to make, reference is made to Mr. Woods' "Statement of Estimated Savings by Various Thermal Unit Standards" (Exhibit No. 2 in Case No. 108), which was offered and received in evidence in this case with Mr. Woods' testimony in No. 108, without being given an exhibit number, however. His testimony will be referred to briefly, but the exhibit is the basis of study.

The prices at the time of Mr. Woods testifying in May, 1922, were about the same as those set forth in Exhibit No. 2 (p. 598), except for oil,—for which a contract has been made and which runs until the first of January next, providing for a supply up to next April (p. 601)—and for coal, the price of which is uncertain and for which no contract has been made.

"The saving in oil from a 22 candle power basis, going to an average 550 B. T. U.'s per cubic foot, average, monthly, should be about 1.03 gallons" (p. 465).

"Per 1,000 cubic feet of gas made, the saving in oil would be about 6.28 cents per thousand" (p. 465). This is calculated on the basis of the previous price of 6.01 cents per gallon; but the present price is approximately half a cent less, 5.42 cents plus delivery charges to the various plants (pp. 648, 649).

The offsetting items are in the increased use of generator fuel, boiler fuel and labor, which amount to 3.39 cents per thousand feet of gas made.

Upon the basis of prices prevailing January 23, 1922, there would be a net economy through the change of standard of 2.89 cents on gas made and 3.07 on sales (p. 467).

4.1 gallons of oil would produce about 630 or 635 B. T. U.'s with carbureted water gas; but with coal gas mixed the B. T. U. would be somewhat higher (p. 493).

The present 22 candle power gas would not average 650 B. T. U. (p. 495).

The data filed by the companies before the hearings at which testimony was adduced included the following:

Combined cost Statement Showing the present annual cost of production and distribution of gas of the Consolidated, Astoria, New Amsterdam, East River, Central Union, Northern Union, Standard and Mutual Gas Companies, based upon the volume of business and the quantities of materials used during the twelve months ended December 31, 1921, and upon prices prevailing as of January 1, 1922, for coal, coke, gas oil, and residuals.

[fol. 3193] Excluding all Inter-company Charges Combined Coal and Water Gas

	Amount	Cost per M cu. ft. sold
Total cost of production (sales 32,995,478,100 cu. ft.) Brt. For'd.	$19,017,929.98	$. 576
Other expenses:		
Distribution, superintendence, supplies and expenses	825,278.33	.0250
Meter and installation work	704,081.04	.0213
Work on consumer's premises	789,489.31	.0239
Repairs of street mains and tunnels	432,291.22	.0134
Repairs of services	206,322.28	.0062
Repairs of meters	1,344,356.01	.0407
Repairs of buildings (branches, street depts., and shops, etc.)	74,579.44	.0023
Repairs of tools (street departments, shops, etc.)		
Repairs of gas appliances	419,451.53	.0127
Public street lighting	924.30	.0000
Commercial expenses	2,527,572.54	.0766
Salaries of general office	627,991.52	.0190
Supplies and expenses, General Office	263,660.14	.0080
Legal expense	116,522.29	.0035
Claims and arrears expense	37,573.36	.0011
Insurance	363,135.36	.0110
Vacation and Sickness	184,406.01	.0056
Contribution to Employees' Aid Society	91,249.48	.0028
Superannuation	140,816.33	.0043
Stable expense	101,675.31	.0031
Automobile expense	269,861.49	.0082
Claims for damages	28,342.01	.0008
Undistributed adjustments	45,553.71	.0014
Duplicate gas charges	(red) 114,914.34	(red) .0035
Uncollectible bills	76,452.61	.0023
Interest on consumers' deposits	99,139.81	.0030
Gas rate appeal No. 2	461,625.45	.0140
Miscellaneous general expense	182,952.80	.0055
Total of other expenses	$10,300,396.34	.3122
Renewals and replacements	1,151,127.93	.0349
Taxes and interest thereon	4,113,707.27	.1246
Total cost of gas sold	$34,583,161.52	1.0481

Deduct, miscellaneous operating revenue:		Amount	Cost per M cu. ft. sold
Rent from gas appliances	$2,514,146.02		
Gross profit from sales of appliances	402,167.21		
Interest on bank balances, etc	55,965.86		
Miscellaneous rent revenue (net)	14,292.54	2,986,571.63	.0905
Net cost after giving effect to miscellaneous operating revenue		$31,596,589.89	$.9576

Allocation of Costs

At the close of his direct examination, Mr. Forstall was interrogated from the foregoing table of items, and he made the following allocation (pp. 295 et seq.).

To demand costs:

Part of street mains and tunnels,
Part of repairs of services,
Part of repairs of meters.

To commodity costs:

Production,
Part of repairs of street mains,
Part of salaries of General Office,
Part of supplies and expense of General Office,
Superannuation, if for men who had been employed in the work.

[fol. 3194] Customer Costs:

Distribution, superintendence, supplies, and expenses,
Meter and installation work,
Work on consumers' premises,
Part of repairs of services,
Part of repairs of meters,
Repairs of buildings, if used entirely for distribution purposes,
Repairs of gas appliances,
Commercial expenses,
Part of salaries of General Office,

Part of supplies and expenses of General Office,
Claims and arrears expense if only for gas and merchandise accounts,
Superannuation, if for men who had been employed in the distribution department,
Uncollectible bills,
Interest on consumers' deposits.

To such costs as are indicated by purpose:

Repairs of building,
Repairs of tools,
Claims and arrears expense,
Insurance,
Vacation and sickness,
Superannuation,
Claims for damages,
Renewals and replacements,
Taxes and interest.

To general expenses, and not to any of the three classes:

Public street lighting,
Legal expenses,
Contribution to Employees' Aid Society,
Undistributed adjustments.

To be cleared through other accounts:

Stable expense,
Automobile expense.

Further Mr. Forstall testified that the allocation of fixed capital must be determined from the relation borne by the average demand to the maximum demand as far as works and street mains are concerned (p. 307). For the services it would all be part of the fixed charge. "None of it would come into commodity cost. Anything that belongs specifically to any one customer should all go into either demand or customer cost. None of it would go into commodity cost." (p. 308).

Where to allocate amortization charges depends upon the condition of the particular company (pp. 312, 313). The reserve for the purpose of taking care of contingencies

[fol. 3195] should be prorated between the three different classes of costs on the basis of the percentages shown by the directly classifiable accounts (p. 315).

Mr. Woods would not undertake to allocate the investment between commodity or anything else, but would put it in all the commodity charge (p. 604).

Classification of Consumers

For convenience there is here set forth Exhibit No. 42:

Consolidated Gas Company of New York

Gas Consumers Classified According to Gas Consumption

Consumers using cubic feet		Number of consumers	Per cent	Total consumption	Per cent
	0.....	14,069	2.93	.....	.....
	100.....	4,212	.88	421,200	0.02
	200.....	6,221	1.30	1,244,200	0.07
	300.....	6,450	1.35	1,935,000	0.11
	400.....	7,049	1.47	2,819,600	0.16
	500.....	7,339	1.53	3,669,500	0.21
600 to	1,000.....	48,918	10.22	39,990,700	2.30
1,100 to	2,000.....	129,546	27.06	202,067,400	11.64
2,100 to	3,000.....	105,954	22.13	267,194,700	15.40
3,100 to	4,000.....	58,849	12.29	206,958,100	11.93
4,100 to	5,000.....	30,827	6.44	138,703,600	7.99
5,100 to	10,000.....	39,485	8.25	265,992,200	15.33
10,100 to	30,000.....	15,385	3.21	249,753,800	14.40
30,100 to	100,000.....	3,559	.74	181,373,200	10.46
100,100 to	200,000.....	626	.13	85,675,300	4.94
200,100 to	500,000.....	234	.05	64,794,000	3.73
500,100 to	1,000,000.....	24	.005	16,112,560	0.93
Over	1,000,000.....	4	.0008	6,371,500	0.36
		478,691	99.9858	1,735,076,500	99.98

Summary

It would appear to be the opinion of the witnesses in this inquiry, that a fundamental principle to be borne in mind is that, in a regulated industry, the costs should be distributed fairly among the patrons in proportion to the use of the plant facilities by each individual or group of customers.

A flat rate method of charging is essentially discriminatory. Under its operations, certain consumers are charged excessive amounts, while others are carried at a loss. This can be readily understood by contrasting the revenue derived from a gas consumer whose use of gas averages 1,000 cubic feet per month, with the revenue derived from a con-

sumer whose use of gas averages 10,000 cubic feet per month. The general conduct of a gas business requires the periodic performance of certain functions (necessitating expenditures) which are governed by time rather than volume of sales. These functions are the commercial activities which center around gas consumers' accounts, viz., inspection of meters, presentation and collection of gas bills, adjustment of complaints, repairs to meters, etc. It [fol. 3196] is proper that each consumer should bear his share of these expenses. It costs as much to read a gas meter or collect a bill from a consumer whose consumption is 1,000 cubic feet per month as it costs for a consumer whose consumption is 10,000 cubic feet per month. Such expenses should be allocated per capita to each consumer instead of being included in the cost of the gas itself. To illustrate, let it be assumed that the cost of producing 1,000 cubic feet of gas is 80 cents, that $4 per thousand cubic feet of gas sold represents the capital investment and that 65 cents per consumer per month represents the commercial expenses. In the case of a consumer using 1,000 cubic feet per month, the amount which he should pay is:

Cost of gas	$.80
8 per cent interest on $4	.32
Commercial expense per consumer	.65
Total	$1.77

The consumer using 10,000 cubic feet of gas per month should pay:

Cost of gas	$8.00
8 per cent interest on $40	3.20
Commercial expense per consumer	.65
Total	$11.85

The sum of the foregoing tabulations amounts to $13.62 and represents what a gas company should receive for the sale of 11,000 cubic feet of gas. In terms of a flat rate, this would make $1.24 per M cu. ft. the necessary supporting figure, but the consumer of 10,000 cubic feet of gas per month, whose cost to the company amounts to $11.85 or

$1.185 per thousand cubic feet, is paying according to the flat rate $.055 per thousand cubic feet too much, while the consumer of 1,000 cubic feet of gas per month, who should be paying $1.77 per thousand cubic feet, is under the application of the $1.24 rate, paying 53 cents less than the cost of his service. From this it can be seen that under the operation of a supporting flat rate, a consumer of 1,000 cubic feet of gas per month contributes nothing whatever in the way of return upon investment and is actually served at a loss, while the consumer of 10,000 cubic feet per month contributes something in excess of 9 per cent return on the investment.

On the basis of the evidence taken, the Commission believes that the most scientific method of prescribing rates for gas is one in which the cost of rendering service to each particular consumer is determined by the actual cost to the company for rendering that service. It is palpable that it would not be practicable to endeavor to impose such a standard of rate making, and no Commission, anywhere, has thus far attempted to do so, although much consideration has been given to the subject. The unwillingness to do this, in which this Commission partakes, is based upon the inadvisability of what would undoubtely be regarded [fol. 3197] by the public as an unwarranted departure from the historical and traditional flat rate. Evidence given by prominent representatives of gas companies indicates that the gas companies themselves are not prepared to go to the extent of an absolutely scientific rate schedule. In principle, the Commission agrees with the view of the Joint Committee on Block Rates that the lesser cost to the company in serving in large industrial consumers justifies a differential based on the quantity of consumption.

By the Commission.

Francis E. Roberts, Secretary.